The PHOTOFACT Servicer

NOVEMBER 18th, 1946 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ VOL. 1, No. 9

ROBERT M. ELLIS, *Editor*

WE ARE IN BUSINESS TO HELP YOU

The way we want to run our business is to make it your business. We want to find out what you need—what you want—and bring it to you.

The organization that plans to do this, Howard W. Sams & Co., Inc., exists only because it has been possible to combine a wealth of merchandising and publishing experience with love for radio which on the part of our older associates goes way back past the "oatmeal box coil and crystal" stage to wireless—loose couplers, electrolytic interrupters—even to coherers and decoherers.

We have long felt that the radio servicing profession has been treated as the step-child of the radio industry. We regard this as most unfair because the prosperity of the radio business depends entirely on proper service maintenance while the product is in the hands of the consumer. Let no manufacturer lose sight of the fact his product is doomed to commercial failure if the ultimate user cannot obtain efficient economical service and repair—and we believe this logically comes from his neighborhood radio service shop. The first step toward providing proper repair is the availability of adequate service information; and in providing this, PHOTOFACT Folders should have the commendation of the entire radio industry.

We are doing more than taking a keen interest in your problems. We are shaping our business to take care of them! The problems you outline to us in your letters—the questions asked by our field research representatives and answered by you are our guide and council. PHOTOFACT Folders represent only our initial step to help you.

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PHOTOFACT FOLDERS, VOLUME II

It is customary in publications to divide production in volumes, each representing actual individual books when the publication is later placed in bound form. This custom will be observed with PHOTOFACT Folders. Volume I ends with Set No. 10; Volume II starts with Set No. 11.

A cumulative index will be included in PHOTOFACT Folder Set No. 10 and will show all models of receivers included in Volume 1, so that your book will be complete in itself, with an index covering its entire contents.

If you file that way, you will find your ten issues completely fills your three-post Binder to form a most impressive looking big book—a book that radio service engineers tell us is the most useful item in the shop.

★ ★

NO SOLUTION

There is one problem in PHOTOFACT Folder layout we haven't been able to solve; and that is how to show the alignment procedure and the chassis views on one page. We know that this would be the preferred arrangement for the alignment procedure, since it would be more convenient not to have to turn the page to locate the adjustment points.

Sound reasons make it desirable for the replacement parts section to occupy the inside spread, that is pages 2 and 3 of a 4-page folder. The list is too lengthy to place on the bottom half of the front page, and it would not be practical to print it in two sections on adjacent pages.

One patron has suggested that we place a horizontal perforation on page 1 so that the page could be divided along the double line above the words "Alignment Instructions." With a split front page, the top half of page 1 can be turned over so that the alignment instructions will be visible and the two chassis views will be shown simultaneously.

We have not adopted this suggestion for two reasons—the production difficulty of securing accurate registration of the perforations, and the fact that a split front page would make the folder more fragile and liable to be torn in handling. However, if any PHOTOFACT Folder user wants this feature he can have a divided front page with a simple snip of the scissors.

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REGISTRATION CARDS

As this is written paper supply continues to be "tight" and we consider ourselves singularly fortunate in being able to bring you PHOTOFACT Folders complete, full sized, and without delay.

However, a limited supply of card board stock will compel us to omit the "Application for Membership in the Howard W. Sams Institute" Cards in about every other issue. If you have registered once as a member of the Howard W. Sams Institute, it is not necessary to re-register with each subsequent PHOTOFACT Folder Set. When you are in a hurry just use the cards to accompany letters requesting service information to identify yourself as a member of the Institute. If you do not have a spare card, please mention you are a member of the Institute—this will identify you and eliminate the necessity of checking our records.

If you have not registered as a member of the Howard W. Sams Institute, do so at once! Valuable direct mailings will be made to all Institute Members in the very near future.

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Automatic Record Changer List Grows!

In PHOTOFACT Servicer No. 7, we announced the new Automatic Record Changer Folders. We told you that we had records of fourteen different models, and that a Folder on one would be included in each forthcoming PHOTOFACT Folder Set. In PHOTOFACT Servicer No. 8, we told you more about the new Automatic Record Changer Folders and how they were produced. We told you that we now had records on a total of twenty-two models.

Our records now show a total of *thirty-seven* models! A "one-per-issue" rate would result in undue delays in getting you the information you need. We have told our special record changer department to complete folders as rapidly as possible, consistent with accuracy and completeness. We will print them as fast as they are released.

Our policy remains as always—to tailor our policy to meet your requirements. You are the boss!

★ ★

TRADE DIRECTORY

A lot of you have asked for a trade directory, so again we will comply with your wishes. A folder giving the names and addresses of all the principal component parts manufacturers is on the way and will be included in a forthcoming PHOTOFACT Folder Set. It's quite a job to set up this folder—we intend to give you only useful information, and eliminate unnecessary or time-consuming details.

Incidentally you already have the addresses of receiver manufacturers—these were given in the "Manufacturers' Code Numbers (R.M.A.)" folder which was included in PHOTOFACT Folder Set No. 5.

And if, by chance—a name of one of your suppliers is overlooked—all you have to do is write and ask us for the address—we will do our best to locate the information for you.

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TEST EQUIPMENT DATA

Regardless of how efficient, beautiful or accurate any piece of test equipment may be, in the last analysis it will have value to the service engineer only if it speeds his work and helps him make more and better repairs.

Accordingly, a group of our engineers are surveying the test equipment field with the view of investigating both test equipment and service or test routine. As is the case with receivers, our research will be made with actual physical samples of test equipment working with radio receivers under conditions closely simulating those of the average service shop. At this time we are unable to advise whether this investigation will lead to the issuance of PHOTOFACT Folders on test equipment, or whether it will simply result in reports on test procedure and test equipment for Institute Members. In any event, we will do our best to help you with the present rather confused situation arising from the many new types and makes of test equipment now being placed on the market.

Up to now we have not maintained files on test equipment, so that we are unable to offer Institute Members the same service on test equipment that we do on receivers—which is another way of saying that for the time being schematics or special instructions on test equipment will have to be obtained from the manufacturer.

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HELP! HELP!

We want to buy, beg, or borrow a Majestic Receiver—Model 7S433, 7S450 or 7S470, Chassis Number 4702, 4703.

Here is the reason. We wrote Majestic for a sample so that we could make a PHOTOFACT Folder on it. Mr. Paul Sperling, their Service Manager, told us—

> "We built only a limited number of Model 7S433, and since production was terminated so long ago, there are none available for your investigation."

A number of you have asked us for a PHOTOFACT Folder on the Majestic Model 7S433 series Receiver. You will have one if we can obtain a sample set. Please write us today—air mail—advising price and condition, if you can supply this set. If acceptable, we will telegraph shipping instructions. Your co-operation will be appreciated.

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JUST TO REMIND YOU . . .

Of important things we told you in previous issues of the PHOTOFACT Servicer:

"How Much Is Your Labor Worth?" Parts 1, 2, and 3 by Don Shaw, are available on request to Institute Members. If you didn't get your copies, just drop us a postal card.

* *

"How Can You Figure Your Profits?" Part I of a monograph "Accounting Procedures for Radio Service Engineers," is available to Institute Members on request.

* *

If you didn't get Set No. 1 and a copy of "How to Use It" tell us—we will gladly send you a copy free. It tells you how to use and how to file PHOTOFACT Folders and how to become a member and keep your membership active in the Howard W. Sams Institute. (You can always send your check to us for back numbers. We will see that they are shipped promptly.)

* *

There's no charge for exchanging imperfectly printed folders. If you have one send it back and we will gladly exchange it.

* *

Be sure to write and tell us of your field experiences. You'll be given full credit for them and you'll be helping others.

* *

Don't forget, please—tell us what receivers you want analyzed first—what replacement parts manufacturers you want us to list and how we can be of more help to you.

* *

We hope that during the coming months, many of you will find it possible to visit us and see for yourself what we are doing. The latchstring is always out so come whenever you can. Our new telephone numbers are MArket 6383 and MArket 6384.

* *

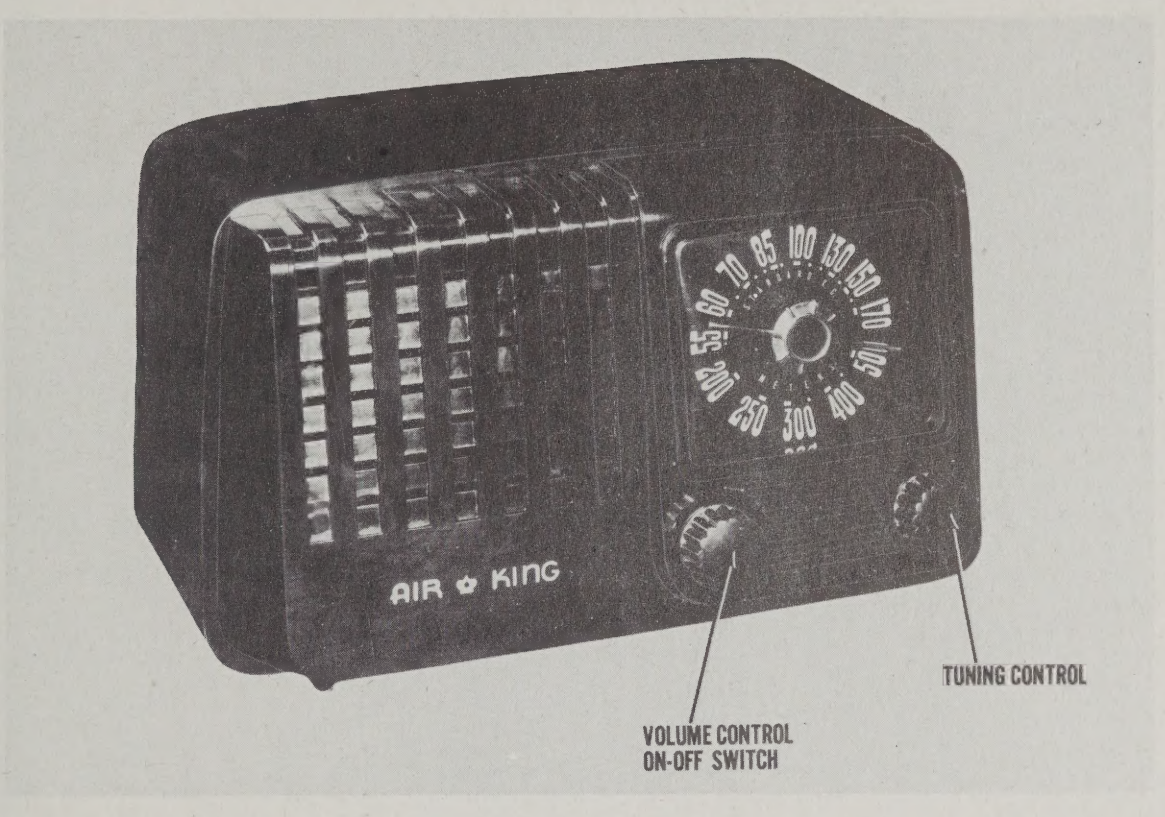
A registration card, packed with every other set of Folders, is for two purposes—to enable you to register if you have not already done so, and after that, to accompany letters requesting service information, to enable us to speed the information to you without having to check our membership records. Be sure you are registered so that you will receive valuable mailings.

PUBLICATION DATES

When will other sets of PHOTOFACT Folders be published?

Set No. 10 . . . . . **December 29**
Volume 2—Set No. 11 . . . . . **January 19**
Volume 2—Set No. 12 . . . . . **January 29**
Volume 2—Set No. 13 . . . . . **February 15**

If you have been unable to get any issues of PHOTOFACT Folder Sets, send your order and money directly to us and we will see that you are supplied.



AIR KING
MODELS 4705, 4706

AIR KING
MODELS 4705, 4706

AIR KING MODEL 4705

TRADE NAME	Air King, Models 4705, 4706
MANUFACTURER	Air King Products Co.,Inc., 1523-63rd St., Brooklyn 19, N.Y.
TYPE SET	AC - DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SK7GT RF Amp., 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1700KC RATING .240 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available, If not, connect capacitor in series with the low side of the signal generator and chassis. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable. Low side to chassis.	455KC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD to reduce hum modulation.
200 MMF	High side to ext. ant. Low side to chassis.	1500KC	1500KC	"	A5	Adjust for maximum output.
200 MMF	"	1500KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7GT	12SA7GT	8R	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIR KING PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150		M-2x40-150	TA-440	PRSA150-40-40	BRD4415	2N511	Filter - Red
B	40	150							" - Blue
8	.05	400		S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
9	.02	400		S-4-02	TC-12	484-02	DT4S2	TP423	Output Plate Bypass
10	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
11	.002	600		S-6-002	TC-22	684-002	DT6D2	TP405	" "
12	.05	400		S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
13	.002	600		S-6-002	TC-22	684-002	DT6D2	TP405	Ant. Coupling
14	500	500		M0.5-35	1FM-35	1468-0005	5W5T5	MC245	Audio Plate Bypass
15	330	500		M0.5-33	1FM-33	1468-0003	5W5T3	MC241	IF Bypass Diode
16	50	500							Fixed Trimmer Cer.
17	47	500		M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	RF Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR KING PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control
B	Shaft			Not Req.	A	Not Req.	Attach to 18A per instructions
C	Switch			M26	41	SW-A	" " " " "

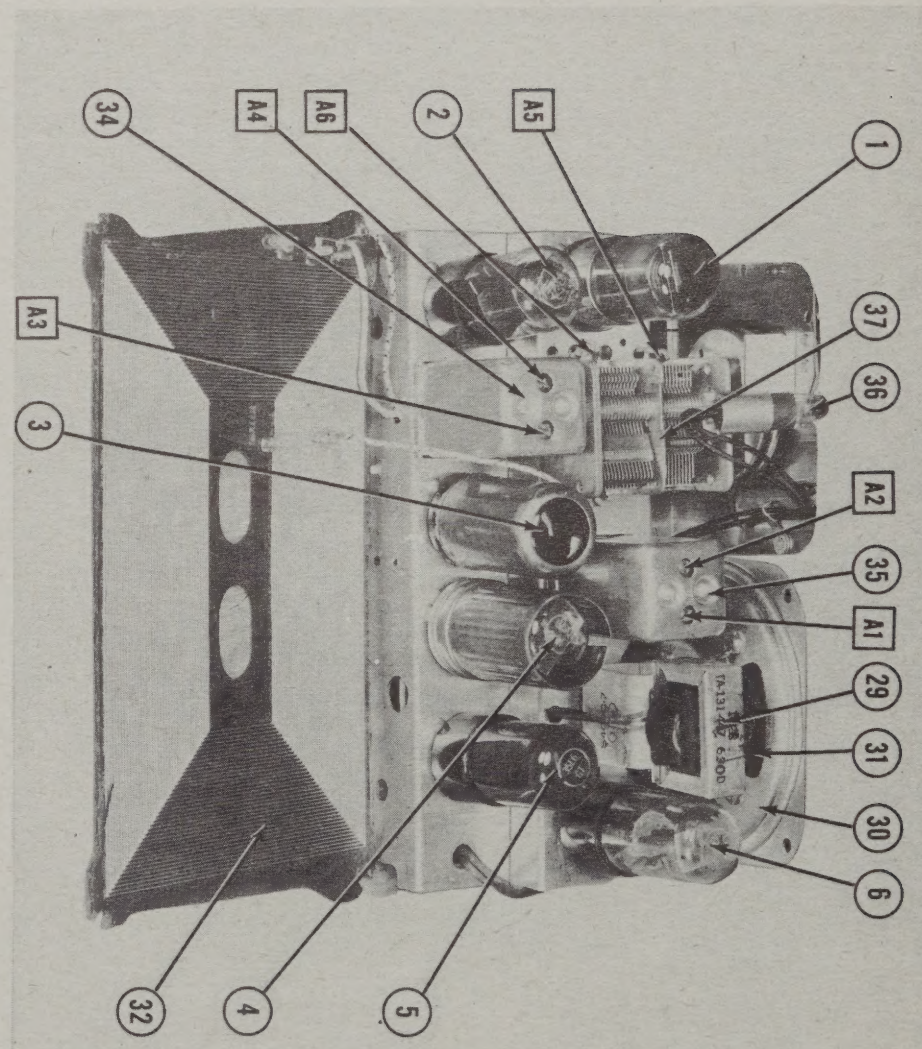
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
19	4700Ω	½		BTS-4700	Yl.-Vl.-Red RF Plate Load
20	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Converter Grid
21	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
22	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
23	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vl.-Grn. 1st AF Grid
24	330KΩ	½		BTS-330K	Or.-Or.-Yl. 1st AF Plate Load
25	470KΩ	½		BTS-470K	Yl.-Vl.-Yl. Output Grid
26	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
27	1500Ω	2		BT-2-1500	Br.-Grn.-Red Filter
28	18Ω	1		BW-1-18	Br.-Gray-Blk. Rectifier Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.		INSTALLATION NOTES
29	3200Ω	3.5Ω	165Ω	.5Ω	TA-131-447	A-3876*	T22S45*		*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA	INSTALLATION NOTES
30	FIELD PM	VC IMP. 3.5Ω	S400C-7	ST-113 Mod. P4-X		
31	CONE DIA. 4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

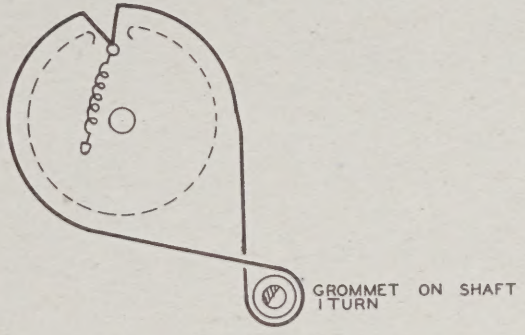
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: MEISSNER PART No.	INSTALLATION NOTES
32	Loop Ant.	0Ω	1.8Ω			
33	Osc. Coil	.6Ω	7Ω		14-1040†	†Add 50 MMFD cap. from grid to high side tuning cap.
34	Input IF	23Ω	23Ω	AK3363	16-6658	
35	Output IF	30.5Ω	30.5Ω	AK3533	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA	INSTALLATION NOTES
36	Bayonet	6-8	0.15	Brown			Type 47

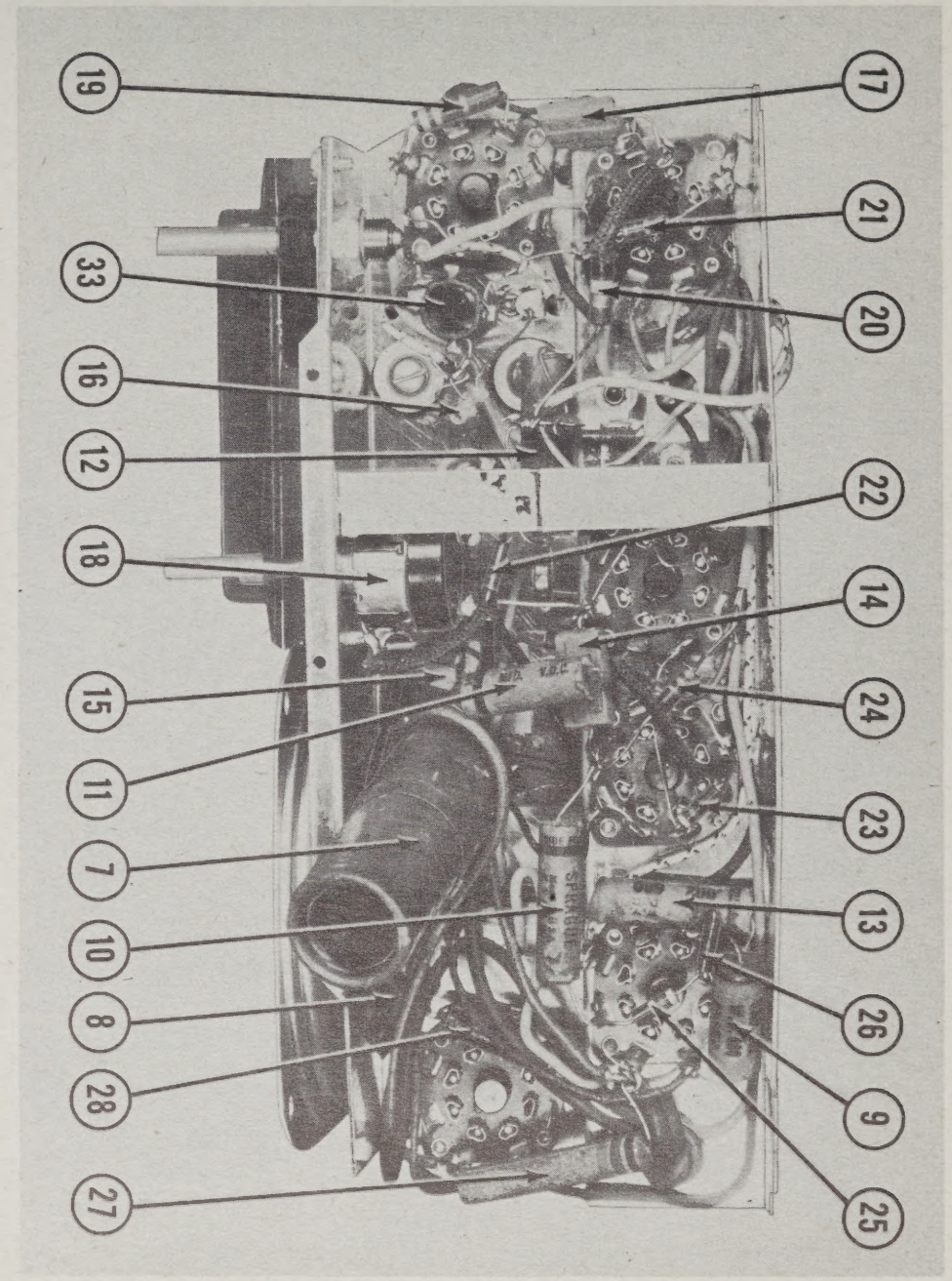
MISCELLANEOUS

ITEM No.	PART NAME	AIR KING PART No.	NOTES
37	Tuning Cap.		2 Gang Variable Cap.

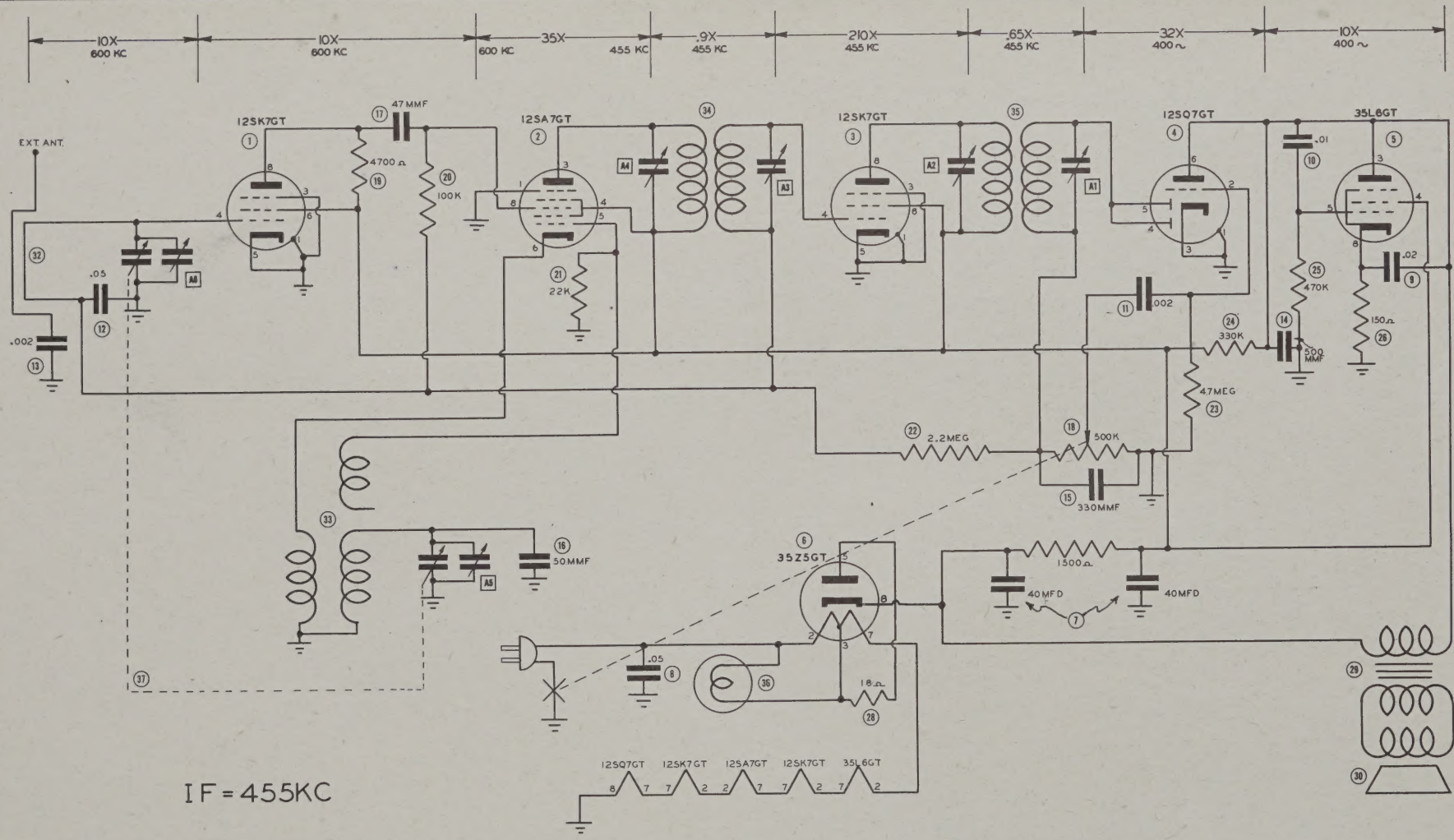


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



AIR KING MODELS 4705, 4706



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0V.	49V.AC	0V.	-.6V.DC	0V.	76V.DC	38.5VAC	38V.DC
2	12SA7GT	0V.	26V.AC	76V.DC	76V.DC	-2.4V.DC	0V.	38.5VAC	-3V.DC
3	12SK7GT	0V.	26V.AC	0V.	-.6V.DC	0V.	76V.DC	13V.AC	76V.DC
4	12SQ7GT	0V.	-.75V.DC	0V.	-.6V.DC	-.6V.DC	48 V.DC	13V.AC	0V.
5	35L6GT	0V.	88V.AC	112V.DC	76V.DC	0V.	0V.	49V.AC	5.2V.DC
6	35Z5GT	0V.	117V.AC	113V.AC	0V.	112V.AC	0V.	88V.AC	117V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0Ω	44Ω	0Ω	2.8MEG.	0Ω	30KΩ	33Ω	35KΩ
2	12SA7GT	0Ω	22Ω	30KΩ	30KΩ	22KΩ	.5Ω	33Ω	2.9MEG.
3	12SK7GT	0Ω	22Ω	0Ω	2.8MEG.	0Ω	30KΩ	12Ω	30KΩ
4	12SQ7GT	0Ω	5 MEG.	0Ω	410KΩ	410KΩ	360KΩ	12Ω	0Ω
5	35L6GT	0Ω	73Ω	30KΩ	30KΩ	430KΩ	INF.	44Ω	150Ω
6	35Z5GT	INF.	100Ω	97Ω	INF.	115Ω	INF.	73Ω	30KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

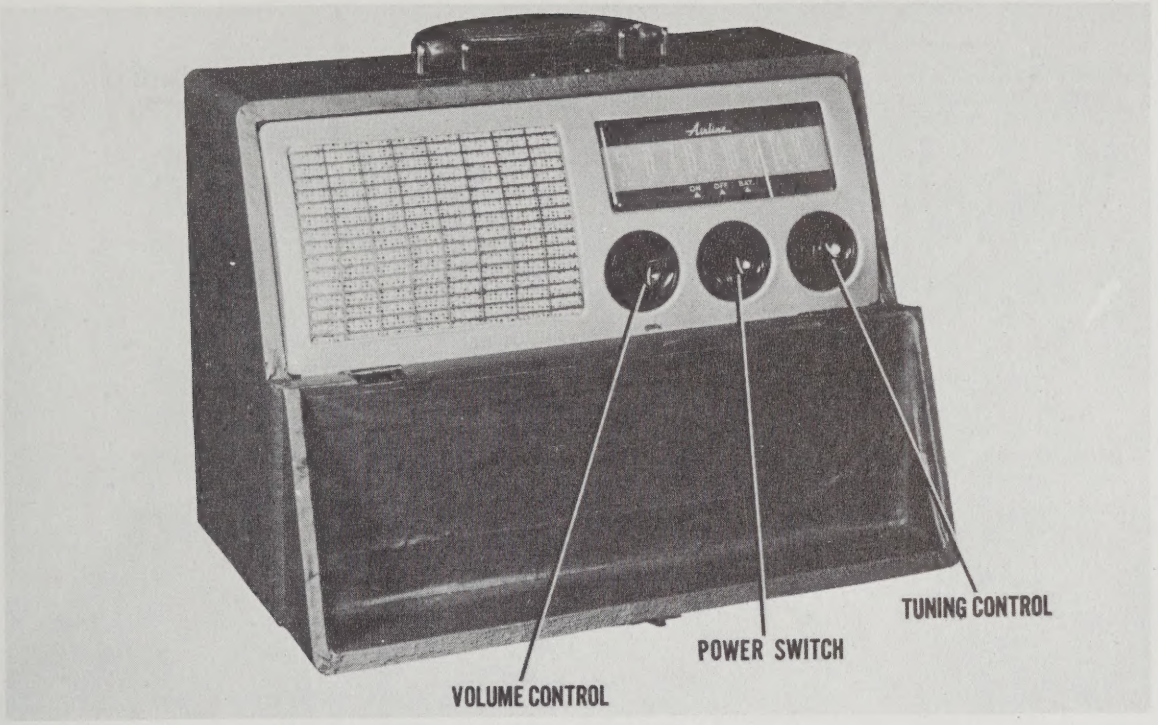
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-1

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

AIRLINE
MODEL 64WG-1052A



AIRLINE MODEL 64WG-1052A

TRADE NAME	Airline Model 64WG-1052A
MANUFACTURER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Ill.
TYPE SET	Three Power Portable AC-DC Battery Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 1R5 Converter, 1U4 IF Amp., 1U4 2nd IF Amp., 1S5 Det.-AVC-AF, 3Q4 Power Output.
POWER SUPPLY	105-125 Volts AC-DC or 9V "A" Supply & 90V "B" Supply in Battery Pack Form (Wards Battery Pack No. 62-35)
TUNING RANGE—BROADCAST	540-1600KC RATING .135 Amps. @ 117V AC; 49MA @ 9V DC & 13MA @ 90V DC

ALIGNMENT INSTRUCTIONS

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #6 (grid) of 1U4 1st IF. Low side to B-.	455KC	High freq.end.	Across voice coil	A1,A2.	Adjust for maximum output. If a-c power is used without an isolation transformer, reduce dummy ant. to .001 MFD. to reduce hum modulation.
.1 MFD.	High side to pin #6 (signal grid) of 1R5. Low side to B-.	"	"	"	A3,A4.	"
.1 MFD.	"	1620KC	"	"	A5	"
50 MMF.	High side to ext. ant. clip on loop. Low side to ext. gnd. clip.	1400KC	Tune for maximum output.	"	A6	Set pointer at 1400KC mark on dial. Re-assemble chassis in cabinet, close back and adjust A6 for maximum output.

Use battery power for alignment whenever possible. If a-c power is used use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1R5	1R5	7AT	
2	IF Amp.	1U4	1U4	6AR	
3	2nd IF Amp.	1U4	1U4	6AR	
4	Det.-AVC-AF	1S5	1S5	6AU	
5	Power Output	3Q4	3Q4	7BA	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	45X347						Filter - Red
B	40	150							" - Green
C	200	35							Filament Bypass-Yel.
7A	50	55	45X348	M-5030-150	TA530	PRSA150-40-40	BRL3515	2N520	" " "
B	20	150							Plate Decoupling-Red
8	.1	400	D67104	S-4-1	TC-1	484-.1	DT4P1	TP428	Line Filter
9	.005	400	B66502	S-6-005	TC-25	484-005	DT6D5	TP408	Output Plate Bypass
10	.005	200	B66502	S-6-005	TC-25	484-005	DT6D5	TP408	Audio Coupling
11	.05	200	B66503	S-4-05	TC-15	484-05	DT4S5	TP426	Audio Screen Bypass
12	.005	200	B66502	S-6-005	TC-25	484-005	DT6D5	TP408	Audio Coupling
13	.04	200	B66403	S-6-04	TC-14	484-04	DT4S4	TP425	Screen Bypass
14	.04	200	B66403	S-6-04	TC-14	484-04	DT4S4	TP425	1st IF Screen Bypass
15	.04	200	B66403	S-6-04	TC-14	484-04	DT4S4	TP425	AVC Filter
16	.25	200	B66254	S-4-25	TC-2	484-.25	DT4P25	TP430	Filament Bypass
17	.05	200	B66503	S-4-05	TC-15	484-05	DT4S5	TP426	" "
18	.1	200	B65104	S-4-1	TC-1	484-.1	DT4P1	TP428	" "
19	.06	400	B66603	S-6-06	TC-16	484-06	DT4S6	TP427	Line Isolation
20	100	500	47X476	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
21A	50		47X112						Diode Filter
B	50								" "
22	100	500	47X476	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Coupling
23	47	500	47X463	M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
58	100	500	47X476	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	RF Coupling*

*Not used in all models.

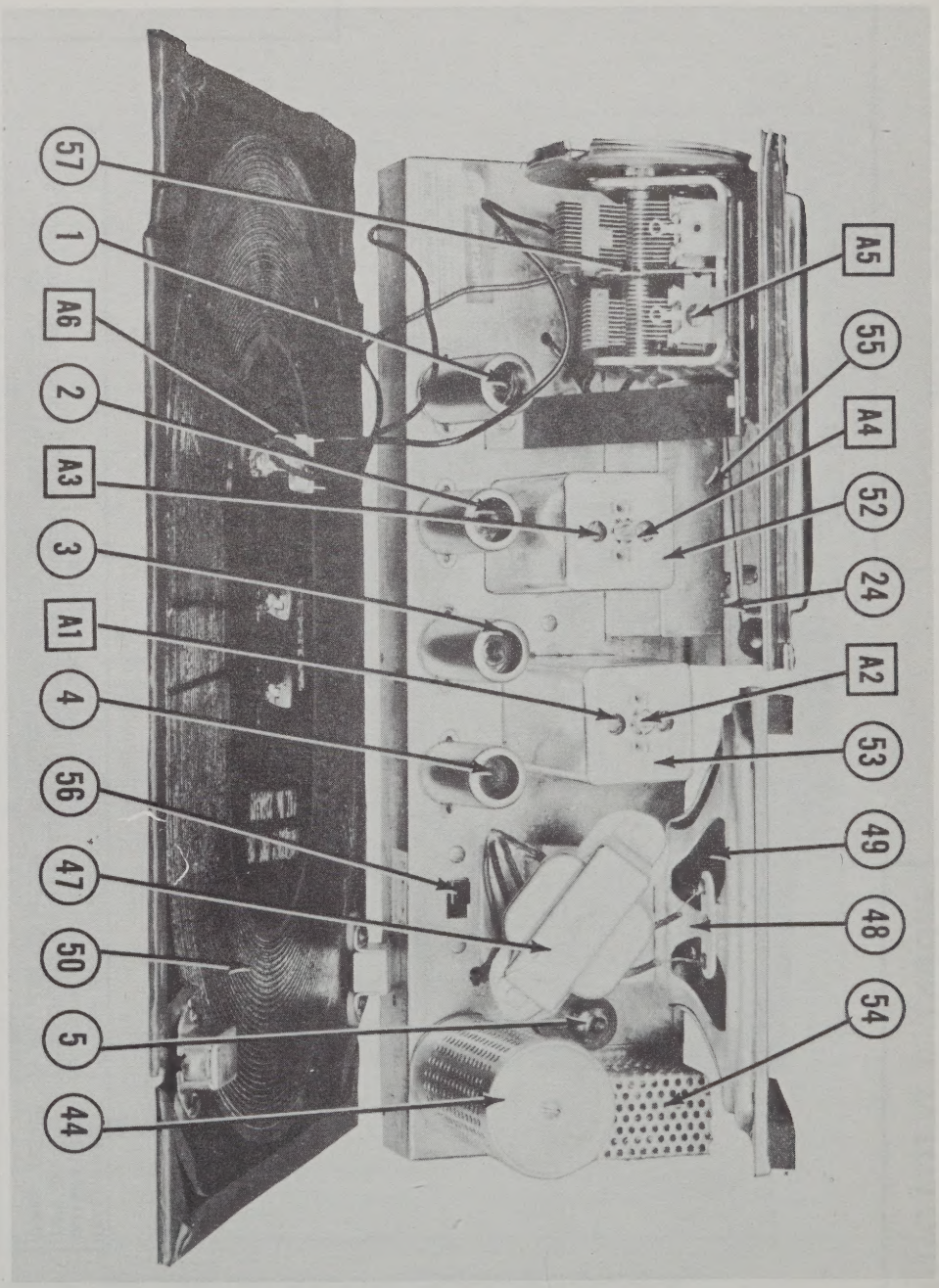
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
24A	500KΩ	1	36X307	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 24A, per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	IRC PART No.	IDENTIFICATION CODES
25	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network-See Note 1
26	100KΩ	½	B85104	BTS-100K	Br.-Blk.-Yl. Oscillator Grid
27	12KΩ	½	B84123	BTS-12K	Br.-Red-Or. 1st IF Plate Load
28	3.3 Meg.	½	B85335	BTS-3.3 Meg.	Or.-Or.-Grn. 2nd IF Grid
29	15KΩ	½	B84153	BTS-15K	Br.-Grn.-Or. Voltage Dropping
30	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
31	1500Ω	½	B84152	BTS-1500	Br.-Grn.-Red Voltage Dropping
32	47KΩ	½	B85473	BTS-47K	Yl.-Vi.-Or. Diode Filter
33	4.7 Meg.	½	B85475	BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Grid
34	4.7 Meg.	½	B85475	BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Screen Dropping
35	1 Meg.	½	B85105	BTS-1 Meg.	Br.-Blk.-Grn. 1st AF Plate Load
36	3.3 Meg.	½	B85335	BTS-3.3 Meg.	Or.-Or.-Grn. Output Grid
37	120Ω	½	B84121	BW-½-120	Br.-Red-Br. Filament String
38	390Ω	½	B84391	BW-½-390	Or.-White-Br. Filament String
39	120Ω	½	B84121	BW-½-120	Br.-Red-Br. Filament String
40	1000Ω	½	B84102	BTS-1000	Br.-Blk.-Red Filament String
41	820Ω	½	B84821	BTS-1000	Gray-Red-Br. Filament String

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

42	33Ω	½	B85330	BW-½-33	Or.-Or.-Blk. Series Filament
43	470Ω	½	B84471	BTS-470	Yl.-Vi.-Br. Filament String
44	1900Ω	10	43X215		Voltage Dropping
45	100Ω	2	D84101	BW-2-100	Br.-Blk.-Br. Line Dropping
46	1500Ω	½	B84152	BTS-1500	Br.-Grn.-Red Filter

Note 1 - Used in early production only.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
47	10,000Ω	3.4Ω	850Ω	.44Ω	Part of 12A443	A-3c23	T-22S47 ‡		‡Drill one new mounting hole.

SPEAKER

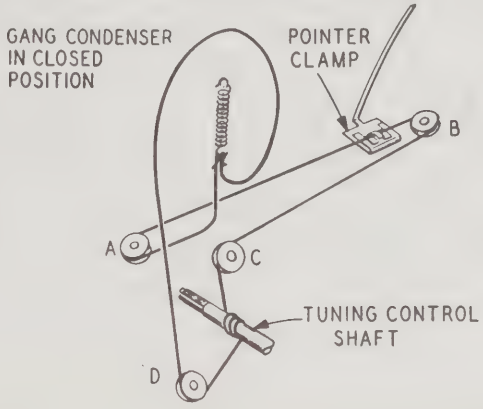
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRLINE PART No.	JENSEN PART No.		
48	FIELD PM	VC IMP. 3.4Ω	12A443	ST-107* Mod. P5-V		*Fabricate new mounting bracket.
49	CONE DIA. 5"	VC DIA. ½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

R F COILS

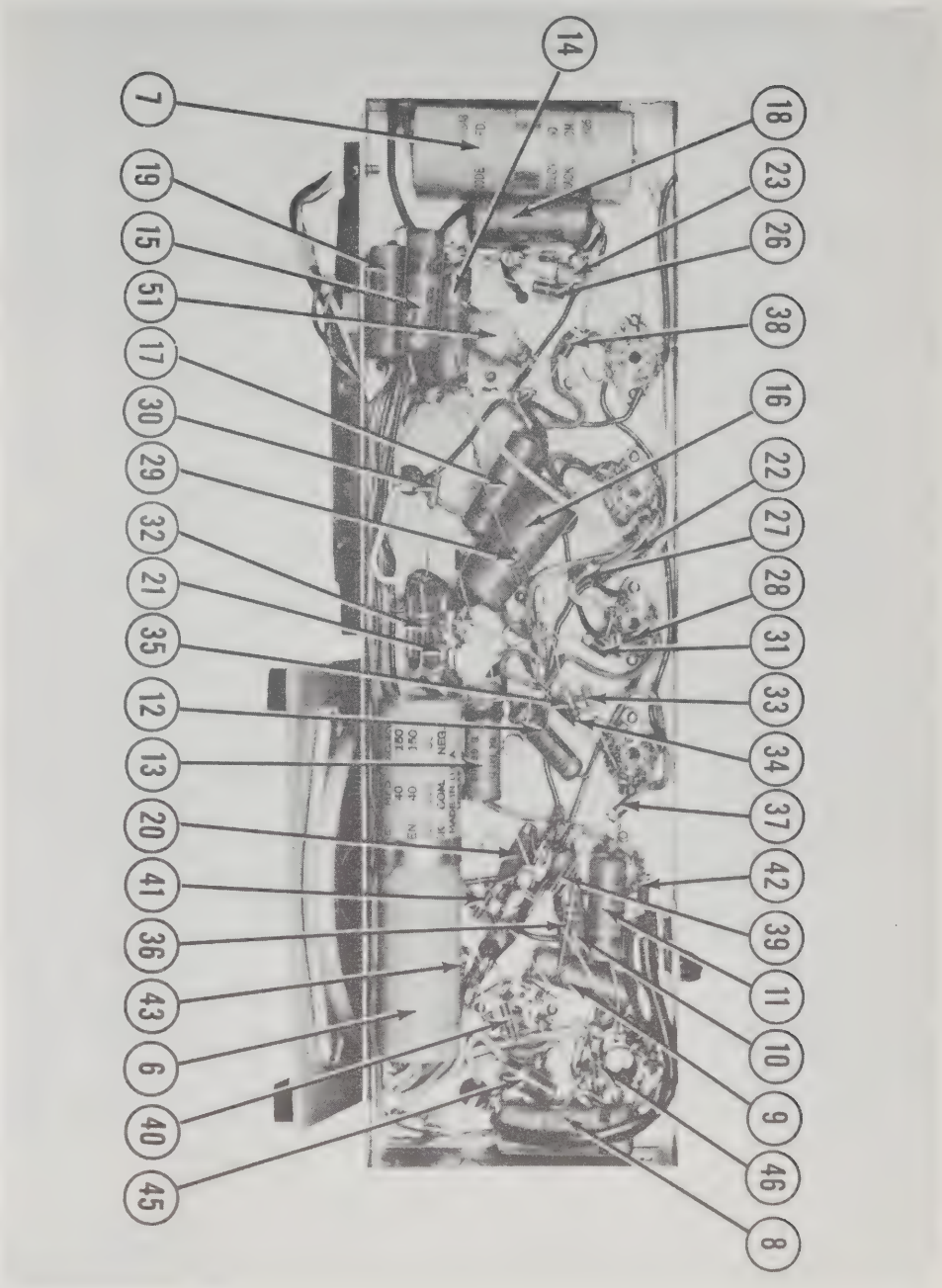
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	AIRLINE PART No.	MEISSNER PART No.	
50	Loop Ant.	.5Ω	3Ω	9A1843		
51	Osc. Coil	2.5Ω	4.1Ω	9A1896	14-1040	
52	Input IF	13Ω	16Ω	9A1840	16-6658	
53	Output IF	15.5Ω	13Ω	9A1841	16-6660	

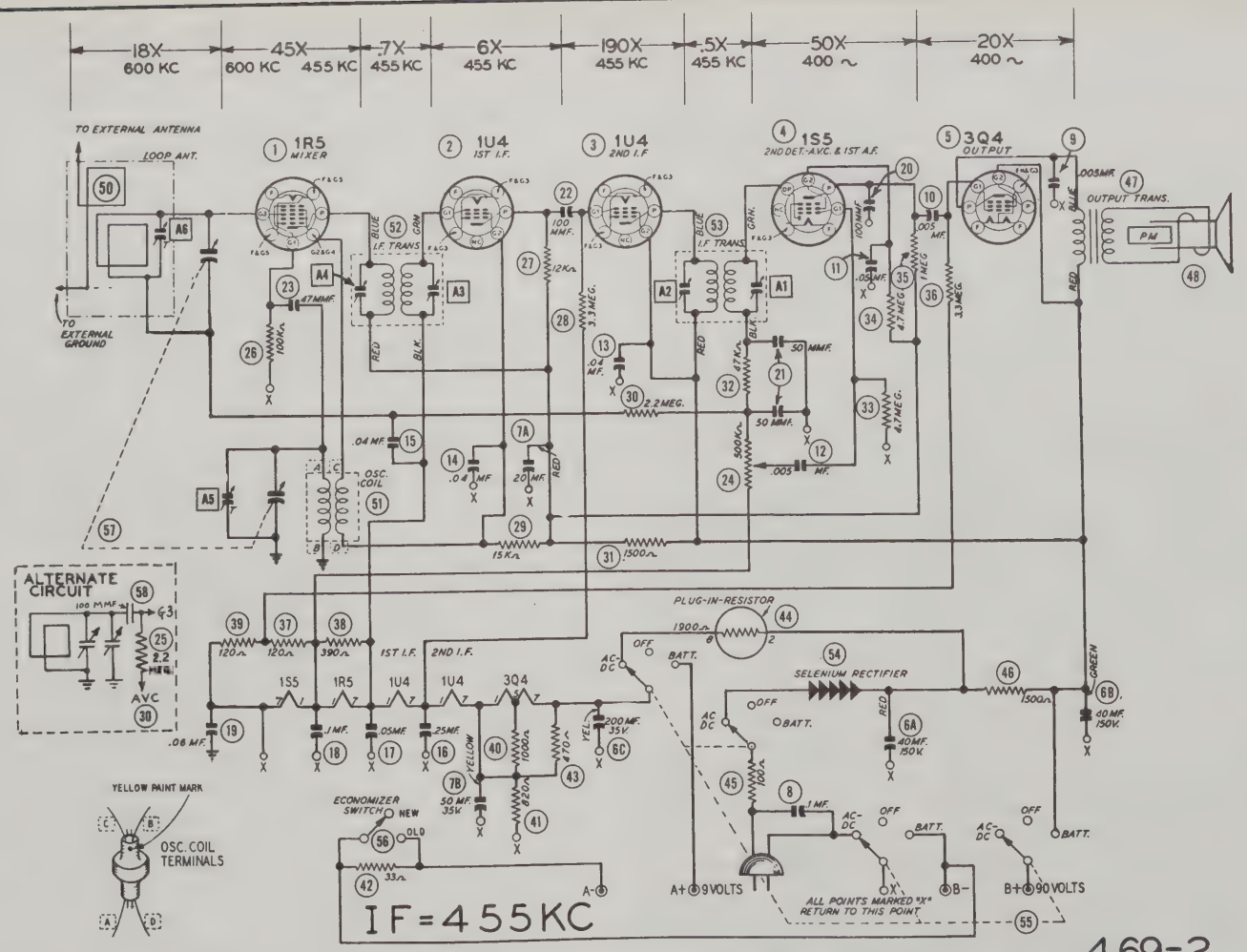
MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
54	Rectifier	25A1019	Selenium
55	Switch	2A203	Changeover (AC-DC, Battery)
56	"	2A175	Economizer
57	Tuning Cap.	14A186	2 Gang Variable with Drive Pulley
A6	Trimmer Cap.	17A123	Ant. Adj. 1-12 MMF.
	Dial Scale	58X633	
	Pointer	15X191	
	Knob	10A595	"Switch"
	"	10A596	"Tuning"
	"	10A597	"Volume"



CHASSIS—BOTTOM VIEW





469-2

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1R5	1.4V.DC	88V.DC	55V.DC	-.75V.DC	1.4V.DC	0V.	2.8V.DC	
2	1U4	2.8V.DC	82V.DC	55V.DC	0V.	2.8V.DC	2.8V.DC	4.4V.DC	
3	1U4	4.4V.DC	93V.DC	93V.DC	0V.	4.4V.DC	1 V.DC ∓	5.8V.DC	
4	1S5	1.4V.DC	0V.	.3V.DC	14V.DC ∓	13V.DC ∓	-.02V.DC	0V.	
5	3Q4	5.8V.DC	88V.DC	0V.	93V.DC	7V.DC	88V.DC	8.2V.DC	
6	BALLAST	0V.	112V.DC	109VAC	93V.DC	0V.	0V.	0V.	8.2V.DC

∓ READ ON 50V SCALE.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

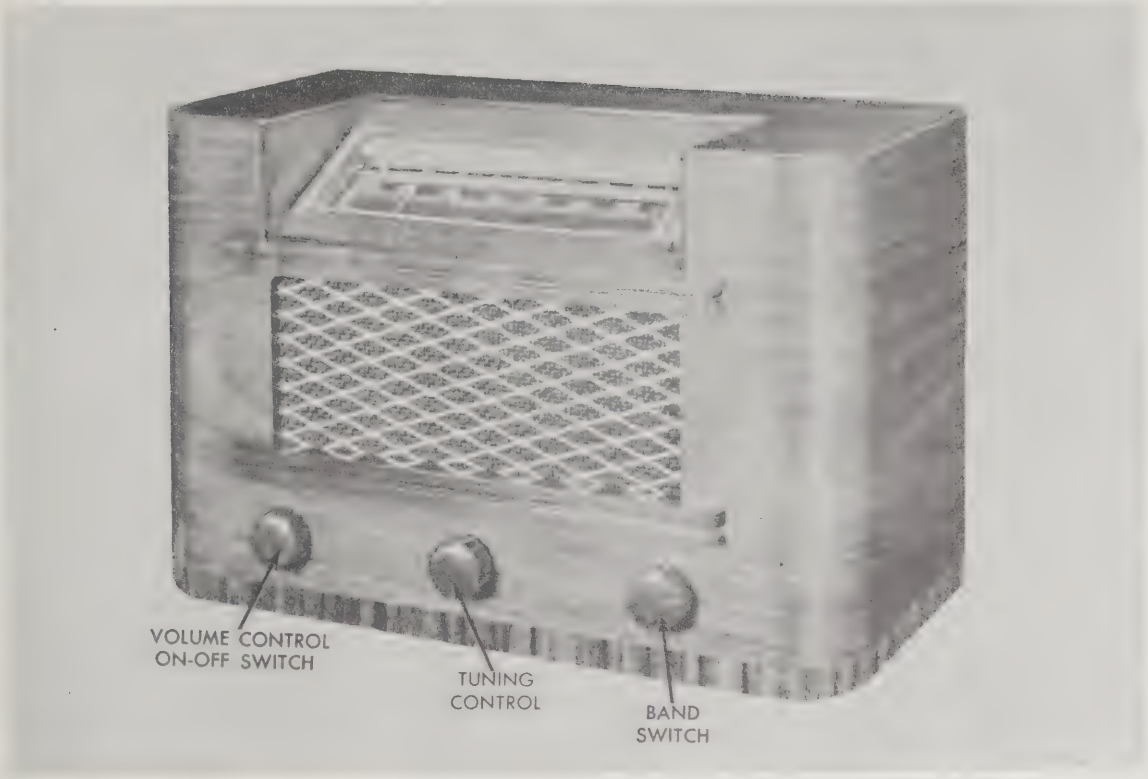
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1R5	*	5KΩ	20KΩ	100KΩ	*	2.5MEG.	*	
2	1U4	*	17KΩ	20KΩ	INF.	*	*	*	
3	1U4	*	3.5KΩ	3.5KΩ	INF.	*	2.8MEG.	*	
4	1S5	*	INF.	560KΩ	4MEG.	11MEG.	4.5MEG.	*	
5	3Q4	*	4KΩ	3MEG.	3.5KΩ	*	4KΩ	*	
6	BALLAST	INF.	1800Ω	370KΩ	3.5KΩ	0Ω	0Ω	INF.	*

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is shorted to B-.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



ARCADIA
MODEL 37 D 14-600

ARCADIA
MODEL 37 D 14-600

ARCADIA MODEL 37D14-600

TRADE NAME	Arcadia Model 37D14-600
MANUFACTURER	Whitney & Co., 933 5th Ave., San Diego, Calif.
TYPE SET	AC-DC Superheterodyne Self Contained Loop Antenna
TUBES (SEVEN)	Types, 12SA7 1st Det.-Osc., 12SK7 1st IF Amp., 6SS7 2nd IF Amp., 12SQ7 2nd Det.-AVC, 12SJ7 1st AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
RATING	.370 Amps. @ 117 Volts
TUNING RANGE—BROADCAST	528-1600KC
SHORT WAVE	5.75-18.3MC

ALIGNMENT INSTRUCTIONS

Position dial pointer by turning gang condenser fully closed and adjust dial pointer over dial pointer index line on dial backplate. (Extreme left facing front of receiver. Volume control at maximum volume and output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to ant. stator section of tuning gang. Low side to B-.	455KC	BC	High freq. end of dial. (Rotor fully open.)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output Use isolation transformer if available. If not, isolating capacitor must be connected between generator ground lead and receiver B-. Also decrease dummy ant. to .001 MFD to prevent excessive hum modulation
200 MMFD	High side to ext. ant. clip. Low side to B-.	1400KC	"	1400KC index line.	"	A5	Adjust for maximum output
200 MMFD	"	"	"	"	"	A6	" " " "
200 MMFD	"	600KC	"	Tune to 600 KC signal.	"	A7	Adjust for maximum output while rocking gang.
200 MMFD	"	1400KC	"	1400KC index line.	"	A5	Adjust for maximum output Repeat last two steps for maximum output.
400Ω res.	"	16MC	SW	"	"	A8	Adjust for maximum output
400Ω res.	"	"	"	"	"	A9	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: ARCADIA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	1st Det.-Osc.	12SA7	12SA7	8R	
2	1st IF Amp.	12SK7	12SK7	8N	
3	2nd IF Amp.	6SS7	6SS7	8N	
4	2nd Det.-AVC	12SQ7	12SQ7	8Q	
5	1st AF	12SJ7	12SJ7	8N	
6	Power Output	35L6GT	35L6GT	7AC	
7	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ARCADIA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8A	50	150	45X342	DSB-2x50-150/20-25	UT-501	PRSA-50502	BRL53150	2N521	Filter - Red
B	50	150			UT-501				" - Green
C	20	25			TA-25			TC26	Bypass - Yellow
9	.2	400	D67204	S-4-2	TC-2	484-.02	DT4P2	TP429	Line Isolating
10	.1	400	D66104	S-4-1	TC-1	484-.1	DT4P1	TP428	Line Filter
11	.025	200	B64253	S-4-02	TC-12	484-.025	DT6S25	TP451	Audio Plate Decoup.
12	.01	200	B66103	S-4-01	TC-11	484-.01	DT4S1	TP421	Audio Coupling
13	.1	200	B66104	S-4-1	TC-1	484-.1	DT4P1	TP428	Audio Screen Bypass
14	.005	200	B66502	S-6-005	TC-25	684-.005	DT6D5	TP408	Audio Coupling
15	.04	200	B66403	S-6-04	TC-14	484-.04	DT4S4	TP425	Tone Compensation
16	.04	200	B66403	S-6-04	TC-14	484-.04	DT4S4	TP425	AVC Filter
17	.1	200	B66104	S-4-1	TC-1	484-.1	DT4P1	TP428	AVC Network
18	.04	200	B66403	S-4-02	TC-14	484-.04	DT4S4	TP425	12SA7 Screen Bypass
19	.001	200	B66102	S-6-001	TC-21	484-.001	DT6D1	TP404	Ant. Coupling
20	.01	200	B63103	S-4-01	TC-11	484-.01	DT4S1	TP421	35L6 Plate Bypass
21	470	500	47X467	MO.5-35	1FM-35	1468-.0005	5W5T5	MC245	Audio Plate Bypass
22	47	500	47X446	MOS.5-45	MS-45	1469-.00005	5R5Q5	MCB225	Tone Compensation
23	100	500	47X476	MO.5-31	1FM-31	1468-.0001	5W5T1	MC235	RF Bypass Diode
24	47	500	47X463	MO.5-45	1FM-45	1468-.00005	5W5Q5	MC225	RF Bypass Vol. Cont.
25	47	500	47X446	MO.5-45	1FM-45	1468-.00005	5W5Q5	MC225	IF Coupling
26	68	500	47X466	MOS.5-47	MS-47	1469-.00007	5W5Q7	MC230	Osc. Grid Cond.
27	.00475	180	46X289						Osc. Padder

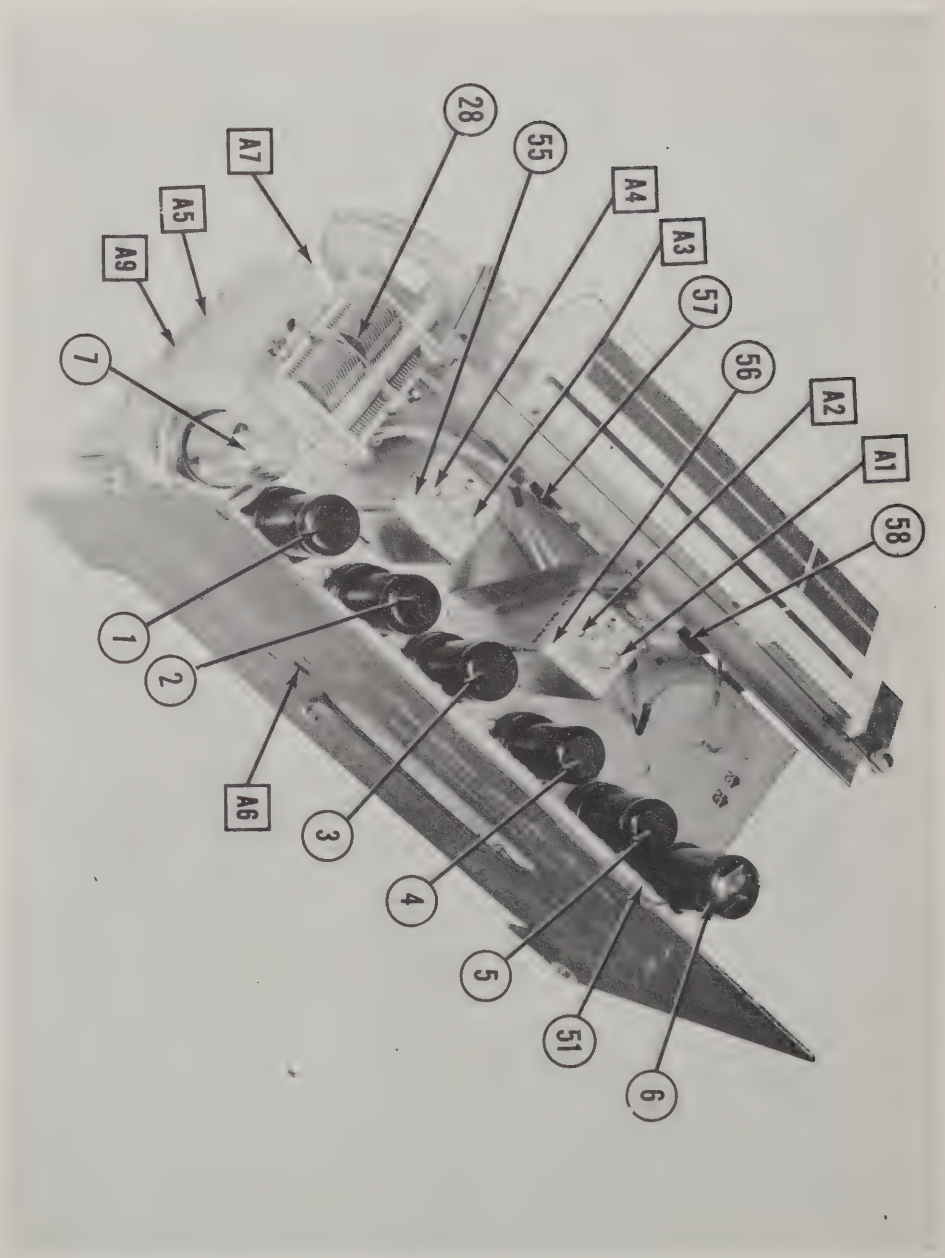
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARCADIA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
29A	500K	1	36X309	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 29A per instructions
C	Switch		Not Req.	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARCADIA PART No.	IRC PART No.	IDENTIFICATION CODES
30	39KΩ	½	B84393	BTS-39K	Or.-Wh.-Or. Conv. Grid
31	4700Ω	½	B84472	BTS-4700	Yl.-Vi.-Red Conv. Screen Dropping
32	47KΩ	½	B85473	BTS-47K	Yl.-Vi.-Or. AVC Network
33	3300Ω	½	B84332	BTS-3300	Or.-Or.-Red 1st IF Plate Load
34	47KΩ	½	B85473	BTS-47K	Yl.-Vi.-Or. AVC Network
35	100KΩ	½	B85104	BTS-100K	Br.-Blk.-Yl. Diode Load
36	2.2 Meg.	½	B85225	BTS-2.2 Meg.	Red-Red-Grn. AVC Filter
37	4.7 Meg.	½	B85475	BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st AF Grid
38	15KΩ	½	B84153	BTS-15K	Br.-Grn.-Or. Tone Compensation
39	470KΩ	½	B85474	BTS-470K	Yl.-Vi.-Yl. 1st AF Screen Dropping
40	33KΩ	½	B84333	BTS-33K	Or.-Or.-Or. 1st AF Plate Load
41	82KΩ	½	B84823	BTS-82K	Gray-Red-Or. 1st AF Plate Dropping
42	470KΩ	½	B85474	BTS-470K	Yl.-Vi.-Yl. Output Grid
43	180Ω	½	B84181	BW-½-180	Br.-Gray-Br. Output Cathode
44	220KΩ	½	B85224	BTS-220K	Red-Red-Yl. Line Isolating
45	775Ω	28	43X214		Line Dropping
46	27Ω	½	B84270	BW-½-27	Red-Vi.-Blk. Rectifier Ballast
47	1500Ω	1	C85152	BTA-1500	Br.-Grn.-Red Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ARCADIA PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
48	3480Ω	3.56Ω	343Ω	.87Ω	51X120A	A-3876*	T-22846		*Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ARCADIA PART No.	JENSEN PART No.		
	FIELD	VC IMP.				
49	PM	3.56Ω	12A430			
	CONE DIA.	VC DIA.				
50	4"x6"	5/8"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

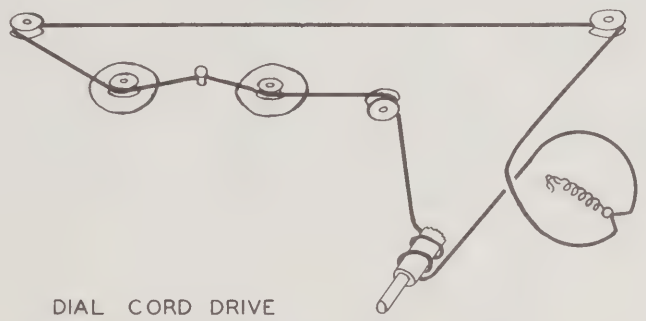
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	ARCADIA PART No.	MEISSNER PART No.	
51	Loop Ant.	.3Ω	1.2Ω	26A386		
52	SW Ant. Coil	.5Ω	.1Ω	9A1443	14-1044	
53	BC Osc. Coil	.1Ω	5.8Ω	9A1442	14-1040	
54	SW Osc. Coil	.2Ω	.1Ω	9A1444	14-1046	
55	Input IF	20Ω	19Ω	9A1793	16-6658	
56	Output IF	20.5Ω	17.5Ω	9A1794	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					ARCADIA PART No.		
57	Bayonet	6-8	.15	Brown	7A193		Type 47
58	"	"	"	"	"		" "

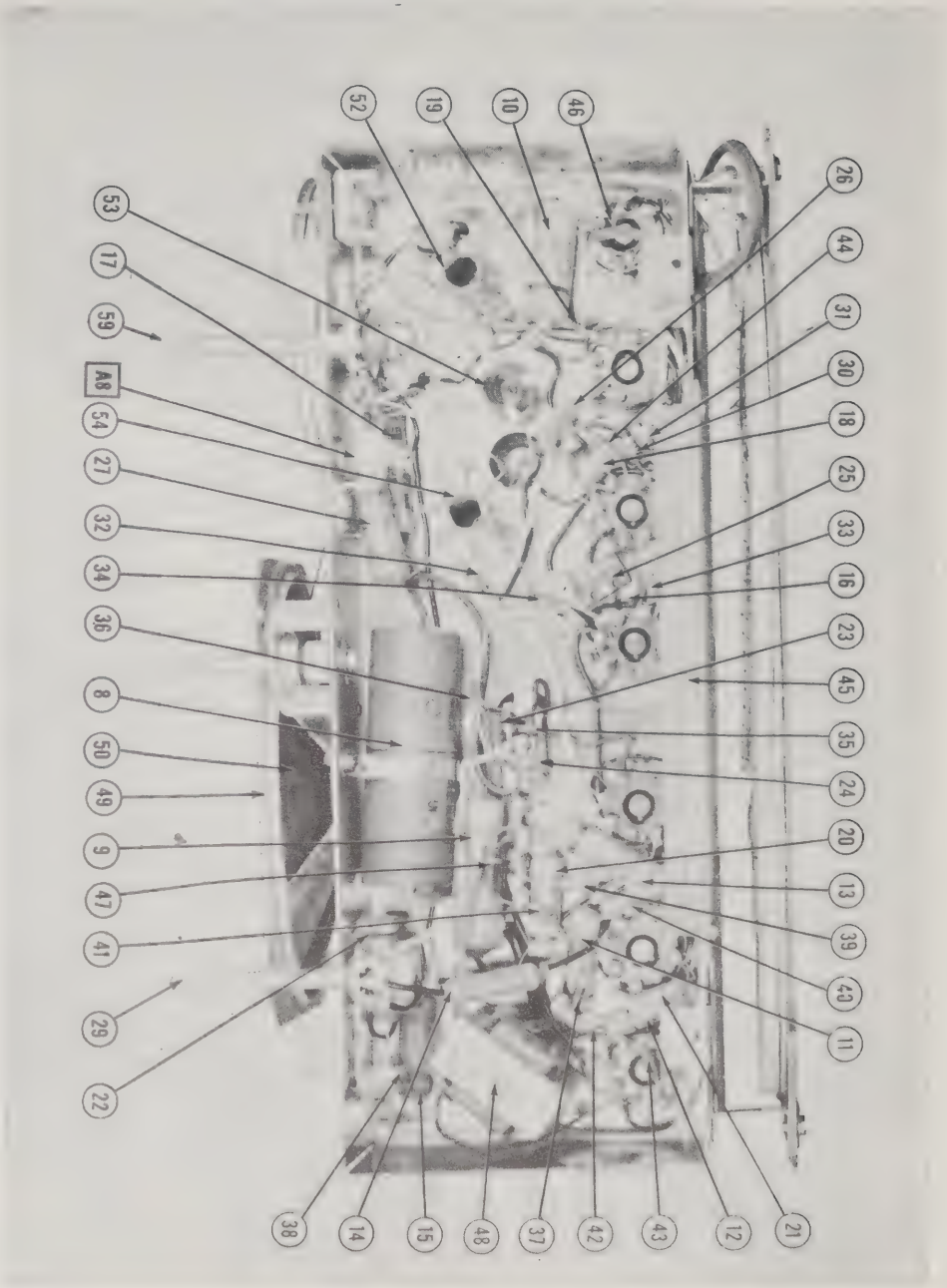
MISCELLANEOUS

ITEM No.	PART NAME	ARCADIA PART No.	NOTES
28	Tuning Cap.	14A148	2 Gang Tuning Capacitor & Pulley
59	Band Switch	2A206	
A5	Trimmer	17A152	Broadcast Osc. 2-25 MMF.
A6	"	17A123	" Ant. 1-12 MMF.
A7	"	17A234	" Padder 250-525 MMF
A8	"	17A174	Short Wave Osc. 2-25 MMF.
A9	"		" " Ant. 2-25 MMF - Part of A5(17A152)
	Knob (Tuning)	10A520	For use with Ivory Cabinet
	" (Volume)	10A521	" " " " "
	" (Band Sw)	10A522	" " " " "
	" (Tuning)	10A467	" " " Walnut "
	" (Volume)	10A468	" " " " "
	" (Band Sw)	10A469	" " " " "

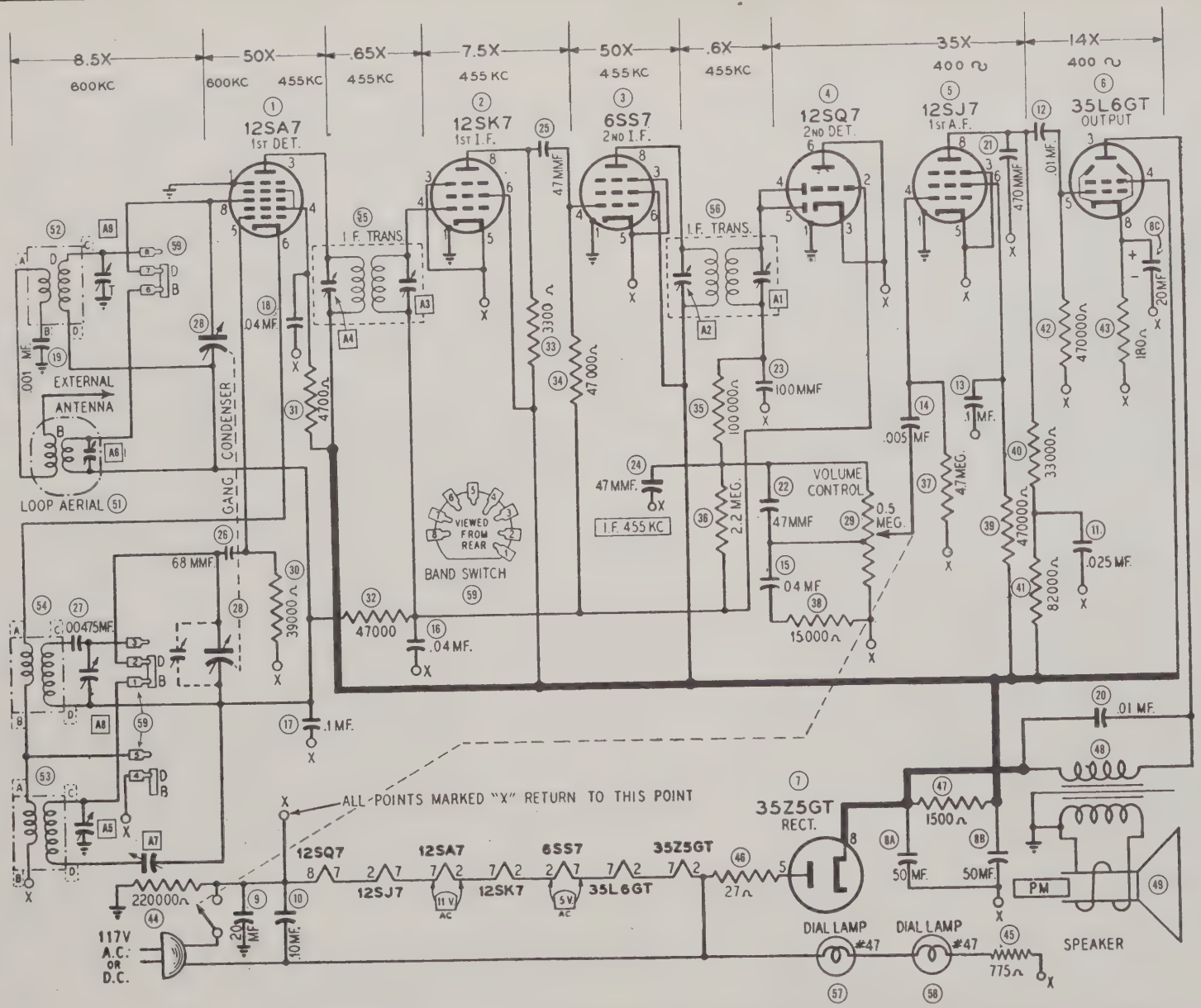


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



ARCADIA MODEL 37D14-600



Pin No	12SA7 Volt	12SA7 Res	12SK7 Volt	12SK7 Res.
1	0V.	200Kn	0V.	200Kn
2	33.5V.AC	37n	45V.AC	48n
3	82V.DC	400Kn	0V.	0n
4	63V.DC	400Kn	-57V.DC	2.5MEG.
5	-9V.DC	36Kn	0V.	0n
6	0V.	.5n	82V.DC	400Kn
7	23V.AC	26n	33.5V.AC	37n
8	-3V.DC	2.5MEG.	50V.DC	400Kn

Pin No	6SS7 Volt	6SS7 Res	12SQ7 Volt	12SQ7 Res
1	0V.	200Kn	0V.	200Kn
2	45V.AC	48n	-57V.DC	2.5MEG.
3	0V.	0n	0V.	0n
4	-35V DC	2.5MEG.	-25V.DC	560Kn
5	0V.	0n	-25V.DC	560Kn
6	82V.DC	400Kn	0V.	0n
7	50V.AC	53n	12V.AC	14n
8	82V.DC	400Kn	0V.	0n

Pin No.	12SJ7 Volt	12SJ7 Res	35L6GT Volt	35L6GT Res
1	0V.	200Kn	0V.	INF.
2	23V.AC	26n	85V.AC	80n
3	0V.	0n	117V.DC	400Kn
4	-35V.DC	4.7MEG.	82V.DC	400Kn
5	0V.	0n	0V.	440Kn
6	18V.DC	900Kn	0V.	0n
7	12V.AC	14n	50V.AC	53n
8	28V.DC	400Kn	48V.DC	150n

Pin No.	35Z5GT Volt	35Z5GT Res
1	0V.	INF.
2	117V.AC	105n
3	111V AC	100n
4	0V.	0n
5	115V.AC	130n
6	0V.	INF.
7	85V.AC	80n
8	125V.DC	400Kn

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-3

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

BELMONT
MODEL 5D128

BELMONT MODEL 5D128

TRADE NAME	Belmont Model 5D128 (Series A)
MANUFACTURER	Belmont Radio Corp., 5921 West Dickens Ave., Chicago 39, Ill.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna and Pushbutton Tuning
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	530-1650KC RATING .230 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 8 (grid) of 12SA7 Low side to B-.	455KC	High freq. end. (Variable fully open)	Across voice coil.	A1,A2, A3,A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy Ant. to .001 MFD. to reduce hum modulation.
"	"	1650KC	"	"	A5	"
	Loop	1400KC	Tune for maximum output.	"	A6	Install loop and chassis in cabinet. Connect output of signal generator to a few turns of wire and radiate signal into receiver loop. Adjust for maximum output through hole in bottom of cabinet.

PUSHBUTTON ADJUSTMENTS

The pushbuttons may be used, after proper adjustment, for the automatic tuning of any five selected stations. They may be set up in any order.

1. Turn on the radio and allow it to warm up.
2. Select call letters of the five desired stations from the call letter sheets supplied with the receiver.
3. Insert one call-letter tab in each of the pushbuttons. Press in acetate tab over each call-letter.
4. Loosen locking screw in the center of the tuning knob by turning it counterclockwise.
5. Press the first pushbutton down all the way. Hold down firmly and carefully tune in the station whose call-letters are on the pushbutton. Release the pushbutton.
6. Follow the same proceedure for the other four pushbuttons, adjusting each to a different station as appears on each pushbutton.
7. Rotate tuning knob on the side of the cabinet as far to the right as it will go. Tighten the locking screw firmly in the center of the tuning knob.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7	12SQ7	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA BELMONT PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	11992	DY-4020-150	E1-24	AF88D	UP4CJ59+	FP306+	■ Filter
B	20	150							▲ "
7	.02	400	C-8D-10774	S-4-02	TC-12	484-02	DT4S2	TP423	50L6 Plate Bypass
8	.004	600	C-8D-10788	S-6-004	TC-24	684-004	DT6D4	TP407	Audio Coupling
9	.002	600	C-8D-10789	S-6-002	TC-22	684-002	DT6D2	TP405	" "
10	.05	200	C-8D-10770	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
11	.15	400	C-8D-10953	S-4-1	TC-1	484-.15	DT4P1	TP417	Line Isolation
12	.05	200	C-8D-10770	S-4-05	TC-15	484-05	DT4S5	TP426	RF Bypass Pwr. Supp
13	.1	400	C-8D-10760	S-4-1	TC-1	484-.1	DT4P1	TP426	Line Filter
14	.01	400	C-8D-10761	S-4-01	TC-11	484-01	DT4S1	TP421	Ant. Coupling
15	220	500	C-8F3-10	M0.5-32	1FM-32	1468-0002	5W5T2	MC237	Audio Plate Bypass
16	100	500	C-8F3-8	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Bypass Diode
17	100	500	C-8F3-8	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor
18	15	500							Fixed Trimmer Cer.

+Do not use bypass section.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BELMONT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
19A	1 Meg.	1	101198	MK402	D13-137	AM-63-2	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 19A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

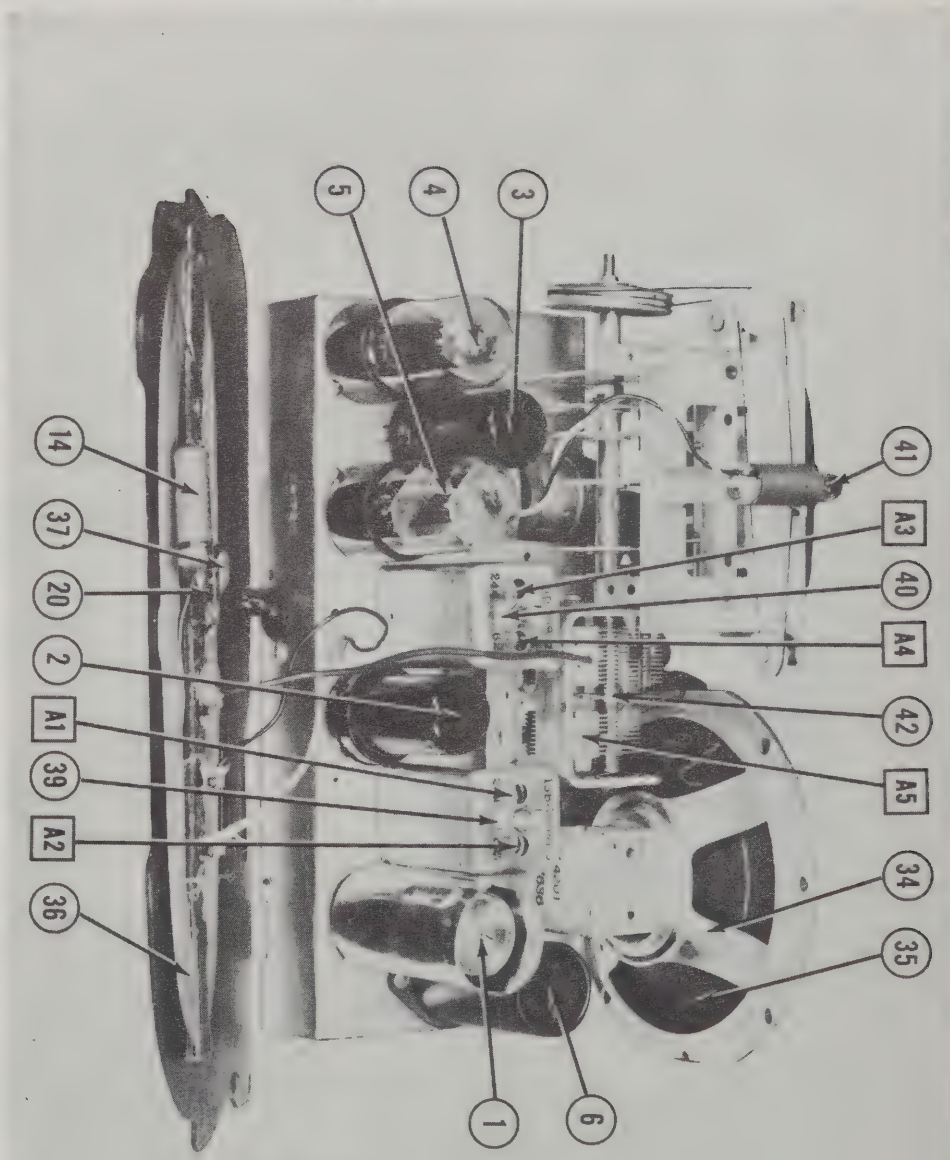
RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BELMONT PART No.	IRC PART No.	IDENTIFICATION CODES
20	1000Ω	½	C-9B1-13	BTS-1000	Br.-Blk.-Red Antenna Load
21	47KΩ	½	C-9B1-82	BTS-47K	Yl.-Vi.-Or. Oscillator Grid
22	47Ω	½	C-9B1-46	BW-½-47	Yl.-Vi.-Blk. IF Cathode
23	3.3 Meg.	½	C-9B1-34	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
24	82KΩ	½	C-9B1-85	BTS-82K	Gray-Red-Or. Audio Voltage Divider
25	10 Meg.	½	C-9B1-37	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
26	220KΩ	½	C-9B1-27	BTS-220K	Red-Red-Yl. " " Plate Load
27	470KΩ	½	C-9B1-29	BTS-470K	Yl.-Vi.-Yl. Output Grid
28	180Ω	½	C-9B1-53	BW-½-180	Br.-Gray-Br. " Cathode
29	220KΩ	½	C-9B1-27	BTS-220K	Red-Red-Yl. Line Isolating
30	18Ω	½	C-9B1-41	BW-½-18	Br.-Gray-Blk. " Dropping
31	27Ω	½	C-9B1-43	BW-½-27	Red-Vi.-Blk. Rectifier Ballast
32	1500Ω	1	C-9B2-64	BTA-1500	Br.-Grn.-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA BELMONT PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
33	2500Ω	3.2Ω	200Ω	.7Ω	B-12C-10735	A-3376‡	T-22S45‡		‡ Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
34	FIELD PM	VC IMP. 3.8Ω	114201	ST-106 * Mod.P5-W		* Fabricate new mounting bracket.
35	CONE DIA. 4-3/4"	VC DIA. 1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

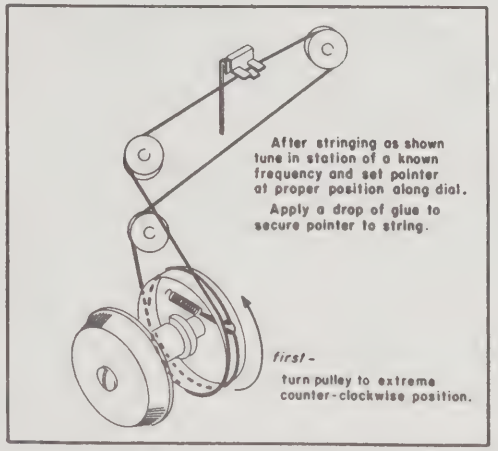
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
36	Loop Ant.	.2Ω	1.5Ω	C-212-10895		Part of C-212-10895
37	Loading coil	13.5Ω		12311		
38	Osc. coil	3.6Ω	1.5Ω	A-13D-10748	14-1040	
39	Input IF	35Ω	36Ω	B-13B-10091	16-6658	
40	Output IF	35Ω	35Ω	B-13B-10812	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA BELMONT PART No.		INSTALLATION NOTES
41	Bayonet	6-8	0.15	Brown	107249		Type 47

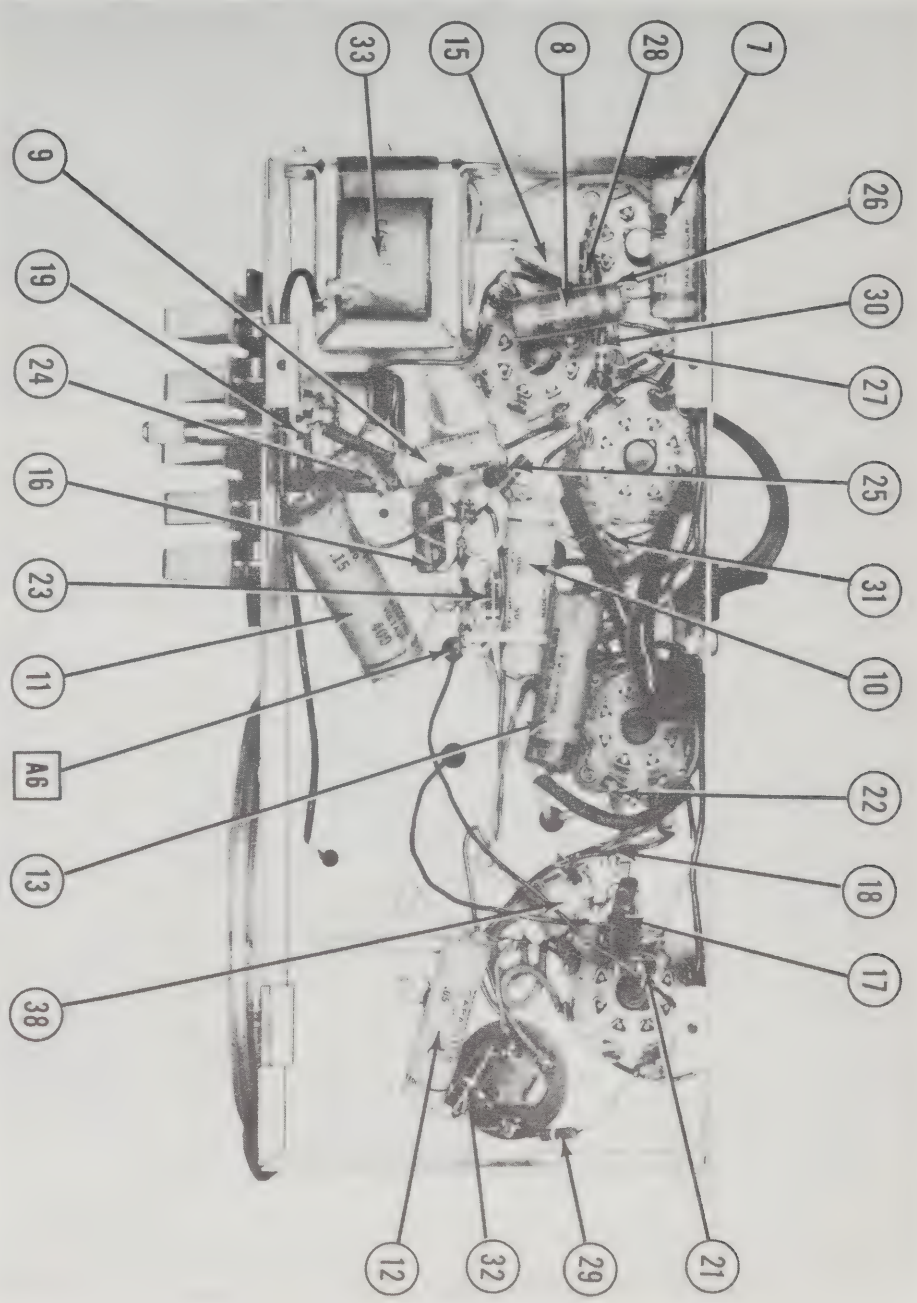
MISCELLANEOUS

ITEM No.	PART NAME	BELMONT PART No.	NOTES
42	Tuning Cap.	B-8A-10754	2 Gang Variable Cap.
	Knob	B-8B-10994-9	"Tuning"
	"	126523-8	"Volume"
	Pushbutton	123292B-8	
	Dial Scale	A-6D-10758	
	" Crystal	112857	
	" Pointer	112745	
	Cabinet	125561-9	

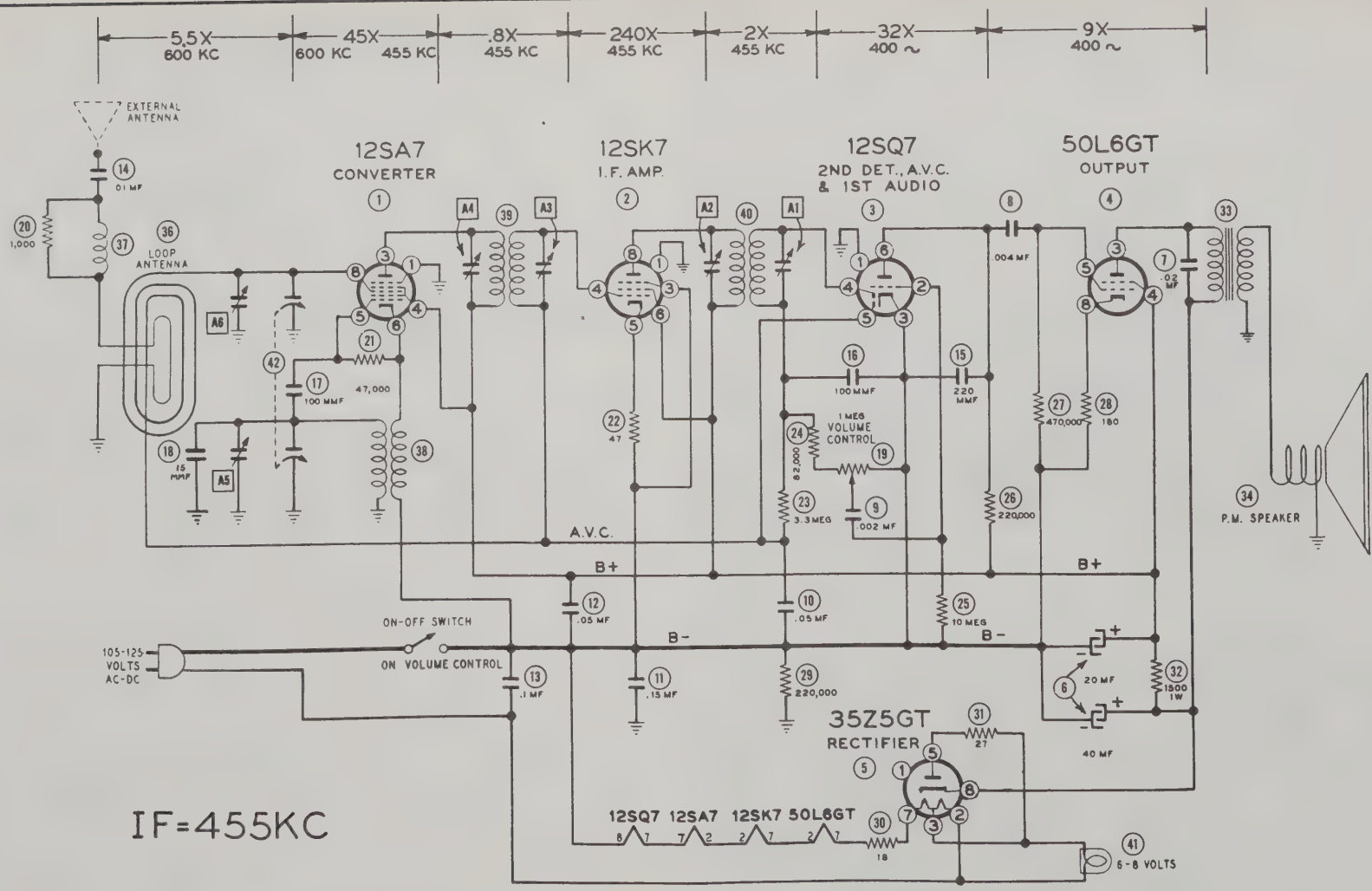

After stringing as shown tune in station of a known frequency and set pointer at proper position along dial.
Apply a drop of glue to secure pointer to string.
first -
turn pulley to extreme counter-clockwise position.

Replacement of Dial Pointer Drive Cord

CHASSIS—BOTTOM VIEW



BELMONT MODEL 5D128



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0 V.	24V.AC	88V.DC	88V.DC	-7.6V.DC	0 V.	12 V.AC	-.25V.DC
2	12SK7	0 V.	24V.AC	0 V.	-.25V.DC	.6V.DC	88V.DC	37V.AC	88V.DC
3	12SQ7	0 V.	-4V.DC	0 V.	-.25V.DC	-.25V.DC	60V.DC	12 V.AC	0 V.
4	50L6GT	0 V.	37V.AC	112V.DC	88V.DC	0 V.	118V.DC	84V.AC	6.2 V.DC
5	35Z5GT	0 V.	117V.AC	113V.AC	0 V.	112V.AC	0 V.	87V.AC	118V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	200KΩ	22Ω	50KΩ	50KΩ	46KΩ	1Ω	11Ω	3.8 MEG
2	12SK7	200KΩ	22Ω	0Ω	3.8MEG	46Ω	50KΩ	34Ω	50KΩ
3	12SQ7	200KΩ	10 MEG	0Ω	1 MEG	3.8MEG	270KΩ	11Ω	0Ω
4	50L6GT	INF.	34Ω	50KΩ	50KΩ	390KΩ	50KΩ	78Ω	170Ω
5	35Z5GT	200KΩ	121Ω	118Ω	INF	145Ω	0Ω	95Ω	50KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-4

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

BELMONT
MODEL 5P19

BELMONT
MODEL 5P19

BELMONT MODEL 5P19

TRADE NAME	Belmont Model 5P19 Series A
MANUFACTURER	Belmont Radio Corp., 5921 West Dickens Ave., Chicago 39, Ill.
TYPE SET	Three Power Portable AC-DC Battery Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 1A5GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC or 6 Volt "A" Battery (Burgess Type No. F4P1 or equiv.); 2-45 Volt "B" Batteries (Burgess Type No. M30 or equiv.)
TUNING RANGE—BROADCAST	530-1650KC RATING .250 Amps. @ 117V AC - 60MA @ 6V DC & 9MA @ 90V DC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at last reference mark at right end of dial. Use battery power whenever possible during alignment. However if AC power is used, connect a capacitor in series with the low side of the signal generator and chassis. The IF and osc. adjustments may be made without connecting the loop by substituting a 1 Meg. resistor across the loop leads. When adjusting A6 have the chassis and loop mounted in the cabinet. A6 may be reached through a hole in the side of the cabinet. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid cap of 1A7. Low side to chassis.	455KC	High freq. end. (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If a-c power is used without isolation trans. reduce dummy antenna to .001 MFD. to reduce hum modulation.
.1 MFD.	"	1650KC	"	"	A5	"
200 MMF.	High side to ext. ant. clip. Low side to chassis.	1400KC	Tune for maximum output.	"	A6	Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: BELMONT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1A7GT	1A7GT	7Z	
2	IF Amp.	1N5GT	1N5GT	5Y	
3	Det.-AVC-AF	1H5GT	1H5GT	5Z	
4	Power Output	1A5GT	1A5GT	6X	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: BELMONT PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	119123						♠ Filter
B	40	150							■ "
C	200	10							Filament Bypass
D	20	50							▲ " "
7	.05	400	10013	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
8	.002	600	10025	S-6-002	TC-22	684-002	DT6D2	TP405	3Q5 Plate Bypass
9	.01	120	100127	S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
10	.1	120	100133	S-4-1	TC-1	484-.1	DT4P1	TP428	Filament Bypass
11	.006	120	100134	S-6-006	TC-26	484-006	DT6D6	TP409	Audio Coupling
12	.01	120	100127	S-4-01	TC-11	484-01	DT4S1	TP421	IF Grid Bypass
13	.25	120	100135	S-4-25	TC-2	484-.25	DT4P25	TP430	Pwr. Supp. Bypass
14	.05	200	100128	S-4-05	TC-15	484-05	DT4S5	TP426	Conv. Screen Bypass
15	.05	200	1009	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
16	100	500	1295	MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
17	100	500	1295 .	MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Bypass
18	10								Fixed Trimmer Cer*

* Not used in all models.

CONTROLS

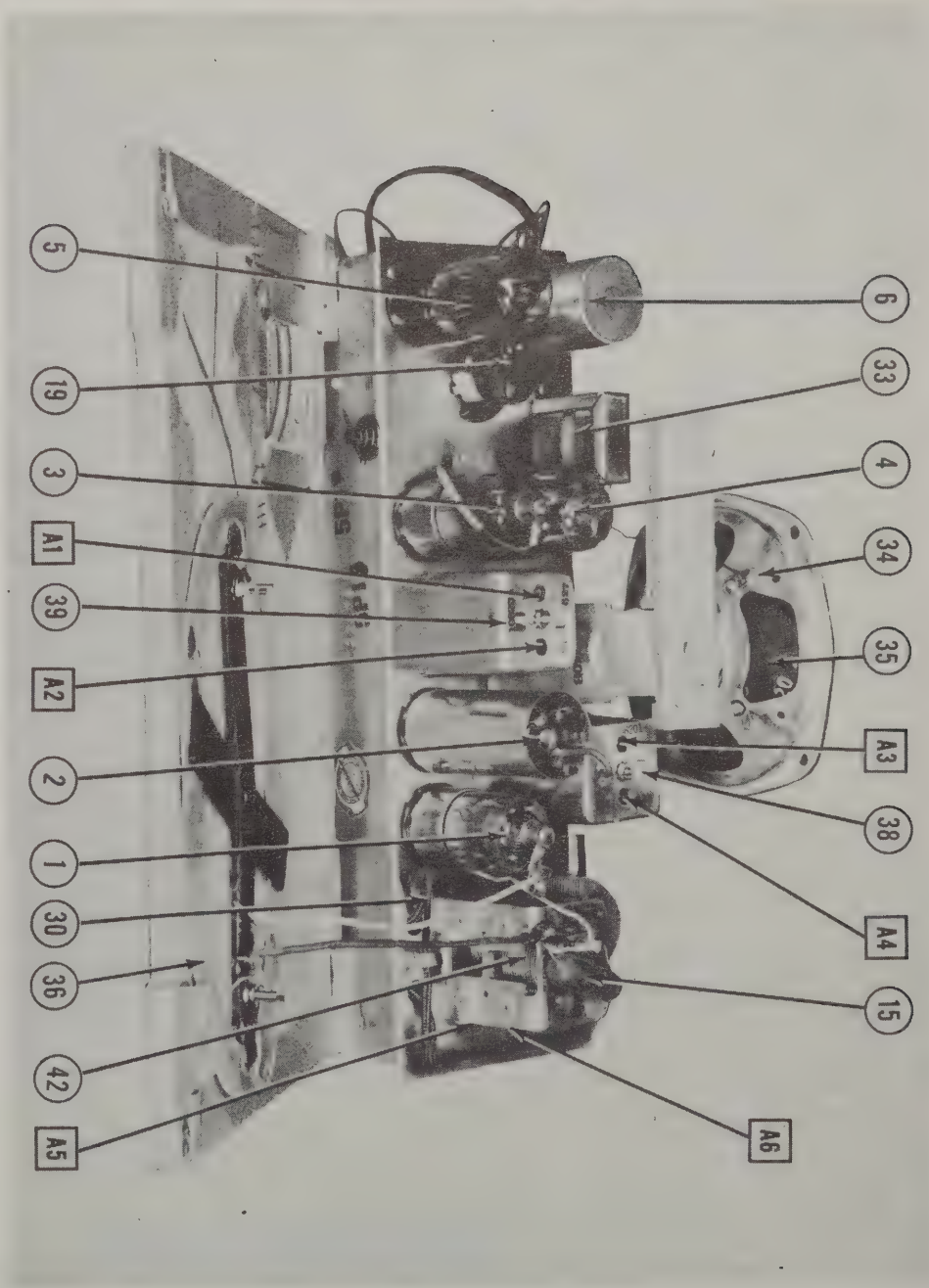
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BELMONT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
19A	1 Meg.	1	101252	MK402	D13-137	AM-63-4	Volume Control
B	Shaft		Not Req.	Not Req.	E	KES-3	Attach to 19A per instructions
C	Switch		" "	SW-A2	42	SW-A2	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BELMONT PART No.	IRC PART No.	IDENTIFICATION CODES
20	220KΩ	½	C-9B1-27	BTS-220K	Red-Red-Yl. Oscillator Grid
21	2700Ω	½	C-9B1-67	BTS-2700	Red-Vi.-Red " Plate
22	68KΩ	½	C-9B1-84	BTS-68K	Blue-Gray-Or. Converter Screen Dropping
23	15 Meg.	½	C-9B1-302	BTS-15 Meg.	Br.-Grn.-Blue IF Grid
24	1000Ω	½	C-9B1-62	BTS-1000	Br.-Blk.-Red Filament String
25	3.3 Meg.	½	C-9B1-34	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
26	10 Meg.	½	C-9B1-37	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
27	1 Meg.	½	C-9B1-31	BTS-1 Meg.	Br.-Blk.-Grn. " " Plate Load
28	3.3 Meg.	½	C-9B1-34	BTS-3.3 Meg.	Or.-Or.-Grn. Output Grid
29	22Ω	½	C-9B1-42	BW-½-22	Red-Red-Blk. Rectifier Ballast
30	545Ω	14	130343	DHA-750	Line Dropping See Note 1.
31	2200Ω	■	C-9B1-66	BTS-2200	Red-Red-Red Filter
32	1975Ω	6	130344	AB-2000	Filament String

Note 1 - Set Slider at 550Ω from one end.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.	REPLACEMENT DATA	INSTALLATION NOTES
33	15,000Ω	3.2Ω	890Ω	.4Ω	108127	A-3496*	T-28848*		* Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD	RATINGS VC Imp.	REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA JENSEN PART No.	REPLACEMENT DATA	INSTALLATION NOTES
34	PM	3.2Ω	114240	ST-107 † Mod. P5-V		† Fabricate new mounting bracket.
35	CO 3 Dia. 4-1/2"	VC Dia. 1/2"				

R F COILS

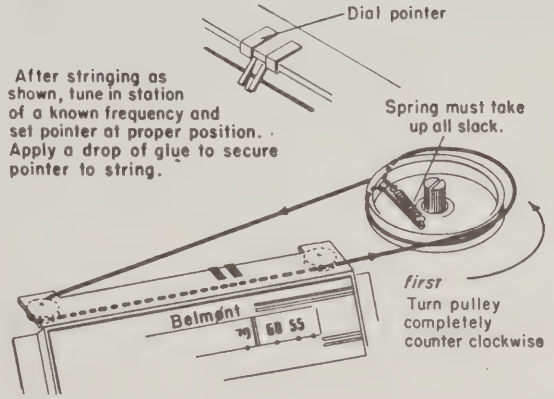
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
36	Loop Ant.	.1Ω	1.2Ω	B-13E-10250		
37	Osc. Coil	5Ω	8.5Ω	A-13D-10239	14-1040	
38	Input IF	25Ω	25Ω	108201	16-6658	
39	Output IF	32Ω	32Ω	108200	16-6660	

DIAL LIGHT

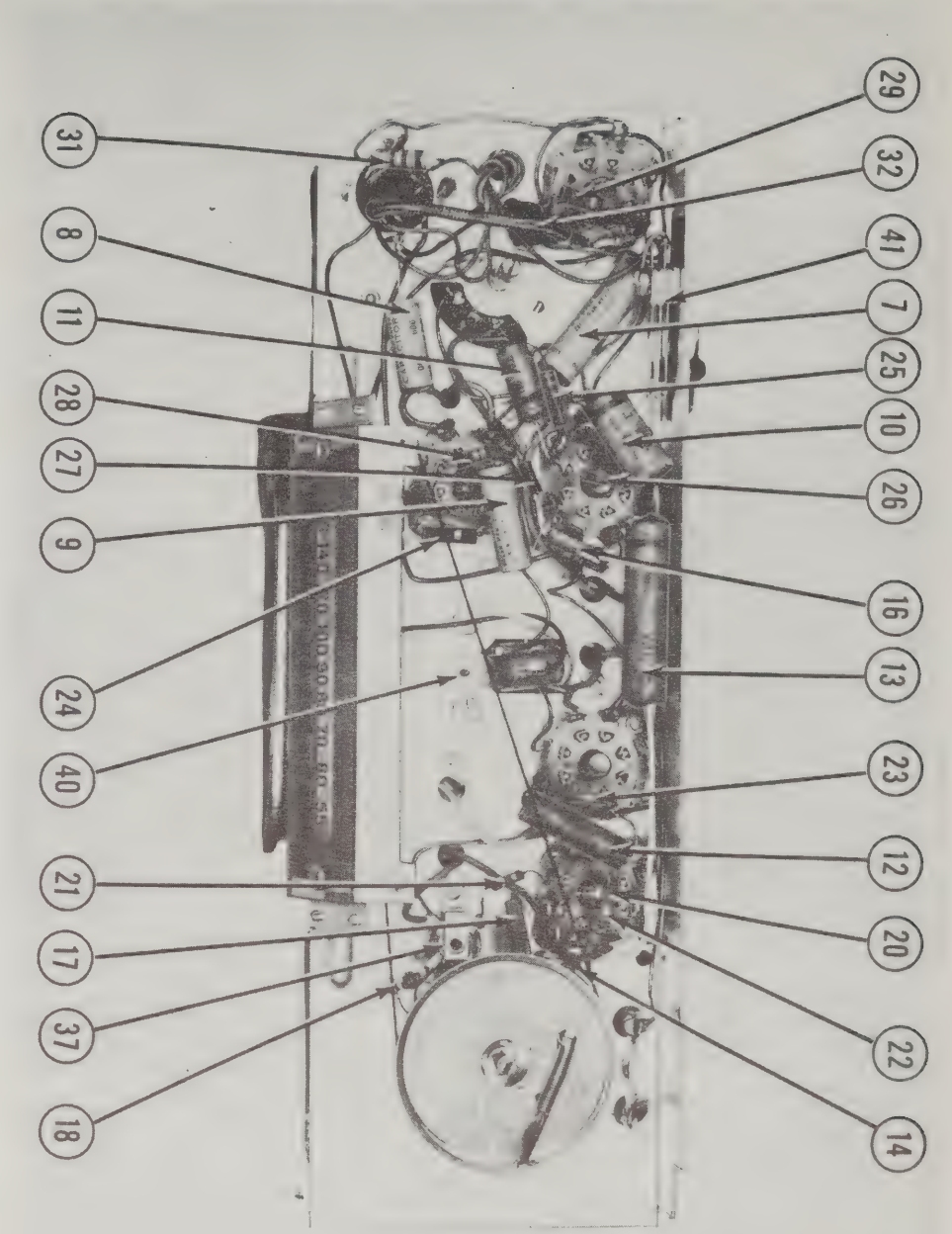
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA BELMONT PART No.	REPLACEMENT DATA	INSTALLATION NOTES
40	Bayonet	6-8	0.15	Brown	107249		Type 47

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
41	Switch	125153	Line-Battery
42	Tuning Cap.	B-8A-10246	2 Gang Variable Cap.
	Dial Scale	B-6D-10249	
	" Pointer	112922	
	Knob	128645-31	"Tuning"
	"	128647-31	"Volume"

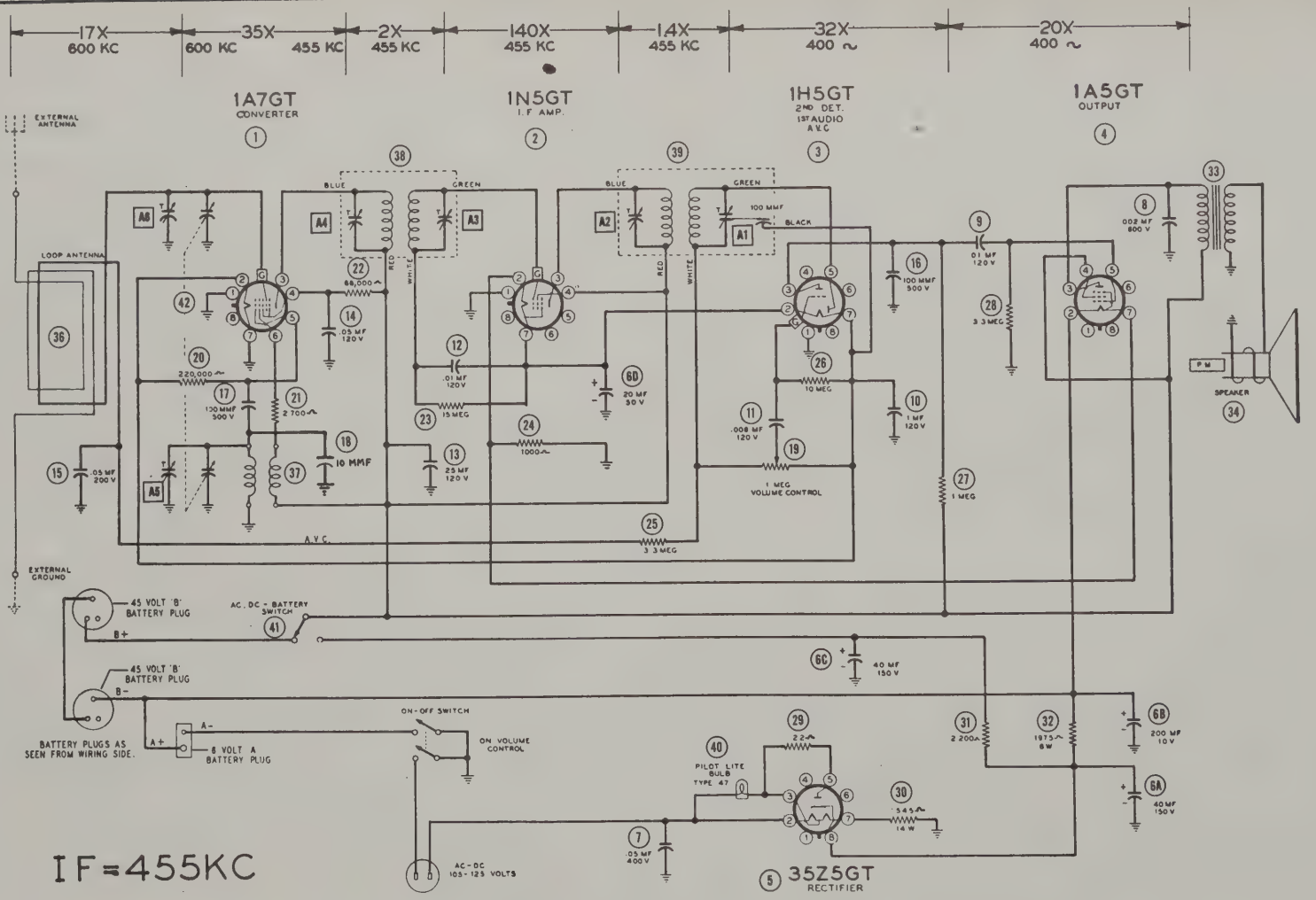

Dial pointer
After stringing as shown, tune in station of a known frequency and set pointer at proper position. Apply a drop of glue to secure pointer to string.
Spring must take up all slack.
Belmont
first
Turn pulley completely counter clockwise

CHASSIS—BOTTOM VIEW



BELMONT MODEL 5P19

BELMONT MODEL 5P19



NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT	0V.	1.6V.DC	94V.DC	43V.DC	-3V.DC	87V.DC	0V.	94V.DC	0V.
2	1N5GT	0V.	4.6V.DC	94V.DC	94V.DC	0V.	0V.	3.2V.DC	0V.	0V.
3	1H5GT	0V.	3.2V.DC	58V.DC	0V.	.2V.DC	0V.	1.6V.DC	0V.	0V.
4	1A5GT	0V.	6 V.DC	92V.DC	94V.DC	0V.	0V.	4.6V.DC	0V.	
5	35Z5GT	0V.	117V.AC	113V.AC	115V.DC	112V.AC	0V.	87V.AC	115V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT	0Ω	*	1800Ω	70KΩ	220KΩ	45KΩ	*	1800Ω	4.7MEG.
2	1N5GT	0Ω	*	1800Ω	1800Ω	INF.	INF.	*	1.5MEG.	1.5MEG.
3	1H5GT	0Ω	*	1MEG.	10MEG.	975KΩ	4.7MEG.	*	INF.	10MEG.
4	1A5GT	0Ω	*	4.6KΩ	4KΩ	3.2MEG.	INF.	*	INF.	
5	35Z5GT	0Ω	535Ω	532Ω	1800Ω	560Ω	INF.	510Ω	1800Ω	

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

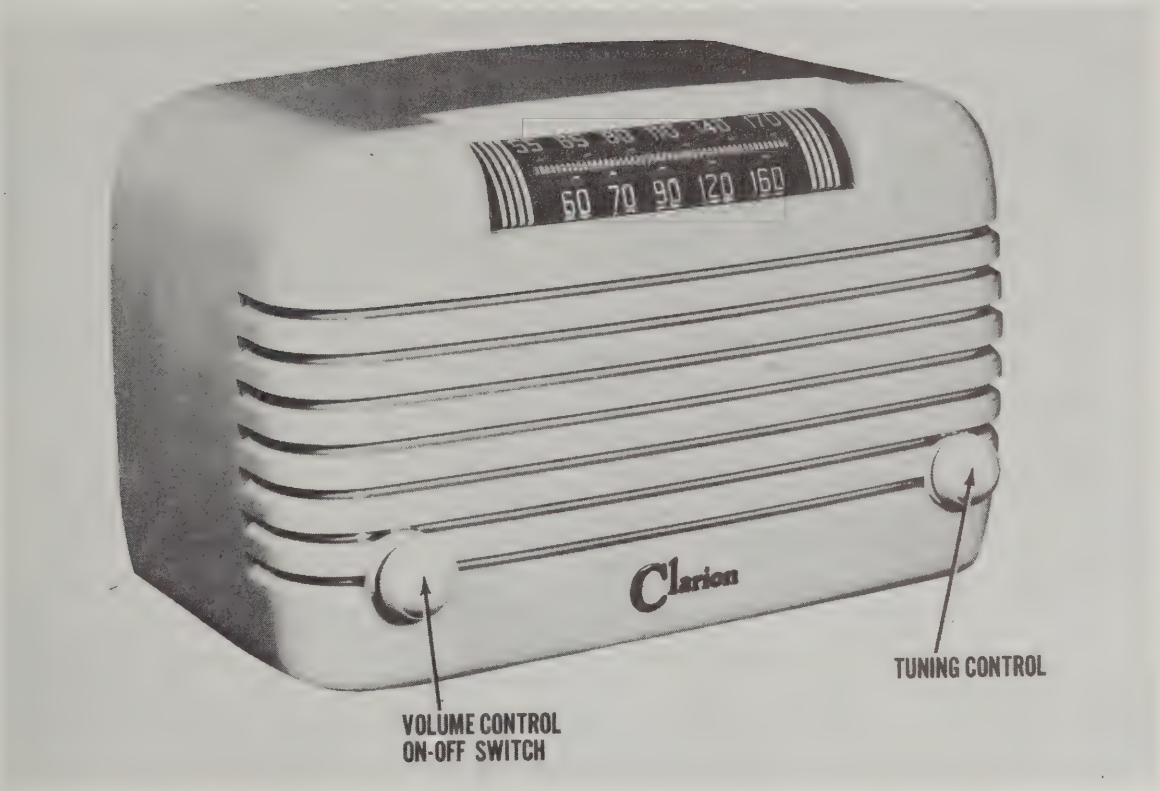
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

469-5

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is grounded.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



CLARION
MODEL C102

CLARION
MODEL C102

CLARION MODEL C102

TRADE NAME	Clarion Model C102
MANUFACTURER	Warwick Mfg. Corp., 4640 W. Harrison St., Chicago, Ill.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	12SA7 Converter, 12SK7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	117 Volt AC-DC
TUNING RANGE—BROADCAST	535-1725K RATING .260 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at last reference mark at the left end of the dial backplate. Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	High freq. end (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy Ant. to .001 MFD. to reduce hum modulation.
250 MMF.	High side to Ant. terminal. Low side to Gnd. terminal	1725KC	"	"	A5	Adjust for maximum output.
"	"	1500KC	Tune for maximum output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: CLARION PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7	12SA7	6A	
2	IF Amp.	12SK7	12SK7	6H	
3	Det.-AVC-AF	12SQ7	12SQ7	6C	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CLARION PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6	20	150	A16-272	M-20-150	UT-201	PRS150-20	BR2A15	TC45	Filter
7	40	150	A16-280	M-40-150	UT-401	PRS150-40	BR4015	TC48	"
8	.02	600	A16-151	S-6-02	TC-12	684-02	DT6S2	TP412	Line Filter
9	.2	400	A16-154	S-4-2	TC-2	484-.2	DT4P2	TP428	Line Isolation
10	.005	600	A16-153	S-6-005	TC-25	684-005	DT6D5	TP408	Output Plate Bypass
11	.02	400	A16-150	S-4-02	TC-12	484-02	DT4S2	TP423	Audio Coupling
12	.005	600	A16-153	S-6-005	TC-25	684-005	DT6D5	TP408	" "
13	.05	200	A16-152	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
14	250	500	A15-176	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	Audio Plate Bypass
15	250	500	A15-176	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	IF Bypass Diode
16	50	500	A15-176	M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CLARION PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
17A	500KΩ	1	A24-164	MK401	D13-133	AM-50-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSE-Z	Attach to 17A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

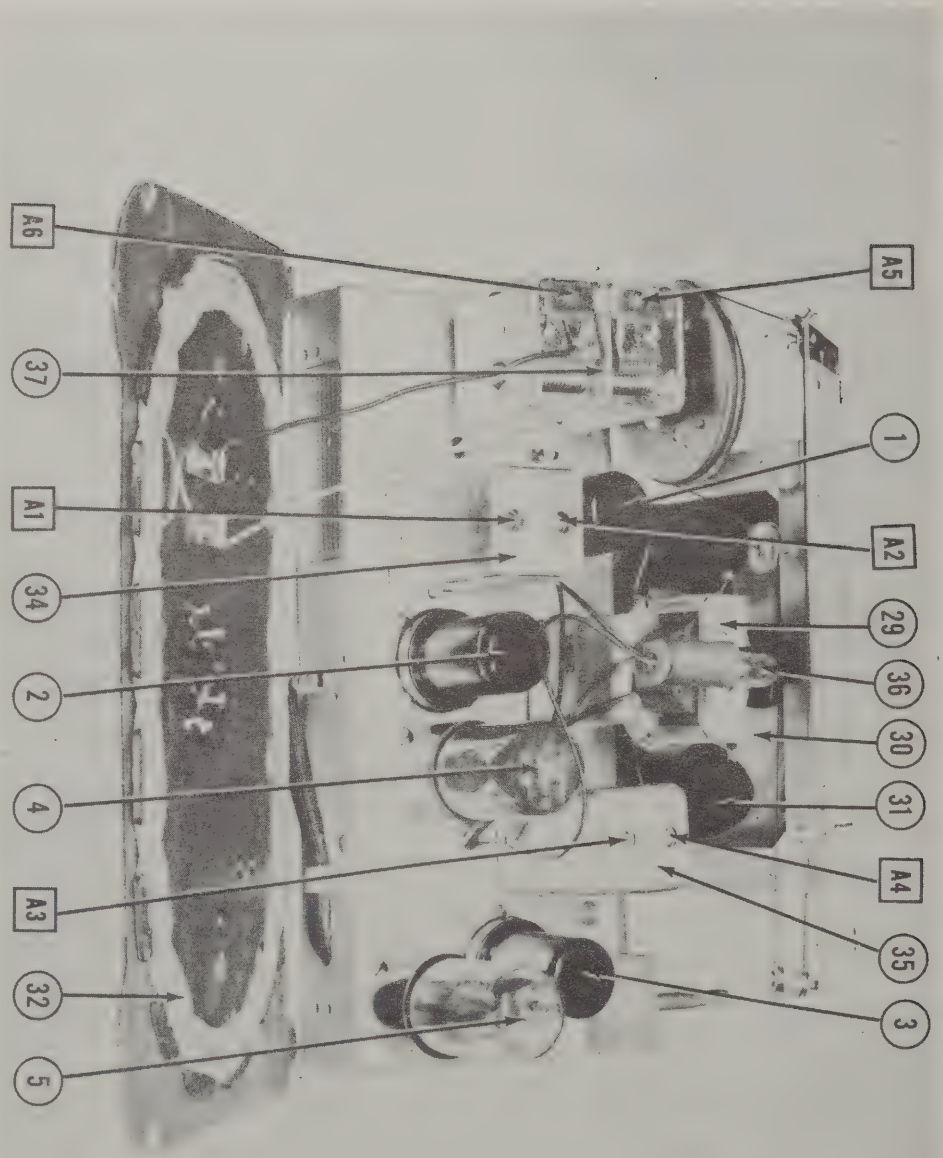
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CLARION PART No.	IRC PART No.	IDENTIFICATION CODES
18	22KΩ	1/3	A60-659	BTS-22K	Red-Red-Or. Oscillator Grid
19	15 Meg.	1/3	A60-664	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
20	1 Meg.	1/3	A60-668	BTS- 1 Meg.	Br.-Blk.-Grn. " "
21	10 Meg.	1/3	A60-663	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
22	47KΩ	1/3	A60-685	BTS-47K	Yl.-Vi.-Or. Diode Load
23	470KΩ	1/3	A60-612	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
24	470KΩ	1/3	A60-662	BTS-470K	Yl.-Vi.-Yl. Output Grid
25	120Ω	1/3	A60-658	BW-½-120	Br.-Red-Br. " Cathode
26	10KΩ	1/3	A60-698	BTS-10K	Br.-Blk.-Or. Bleeder
27	1000Ω	1/2	A60-198	BTS-1000	Br.-Blk.-Red Filter
28	220KΩ	1/3	A60-662	BTS-220K	Red-Red-Yl. Line Isolation

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: CLARION PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
29	2000Ω	32	160Ω	.72Ω	A60-225	A-3878*	T-22845*		* Bend mounting tabs down, file out slots and mount on original bracket

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA CLARION PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		
30A	PM	3Ω	B79-340	Mod. P5-X		
B			B79-343			Alternate Speaker
C			B79-344			" "
	CONE DIA.	VC DIA.				
31	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

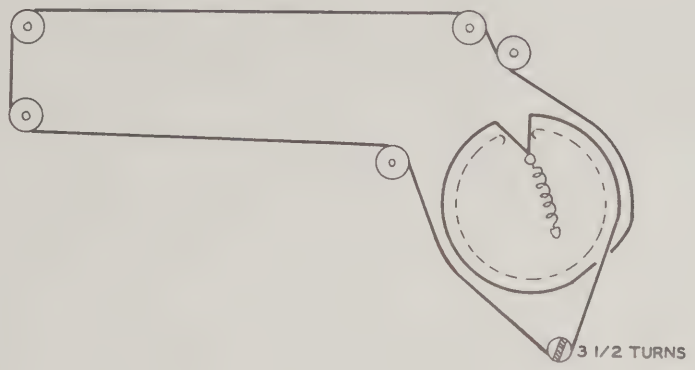
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CLARION PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
32	Loop Ant.	.1Ω	1.3Ω	B82-40		
33	Osc. Coil	1Ω	5.8Ω	B10-411		
34	Input IF	40Ω	38Ω	B10-453	16-6658	
35	Output IF	39Ω	37Ω	B10-454	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CLARION PART No.		INSTALLATION NOTES
36	Bayonet	6-8	0.15	Brown			Type 47

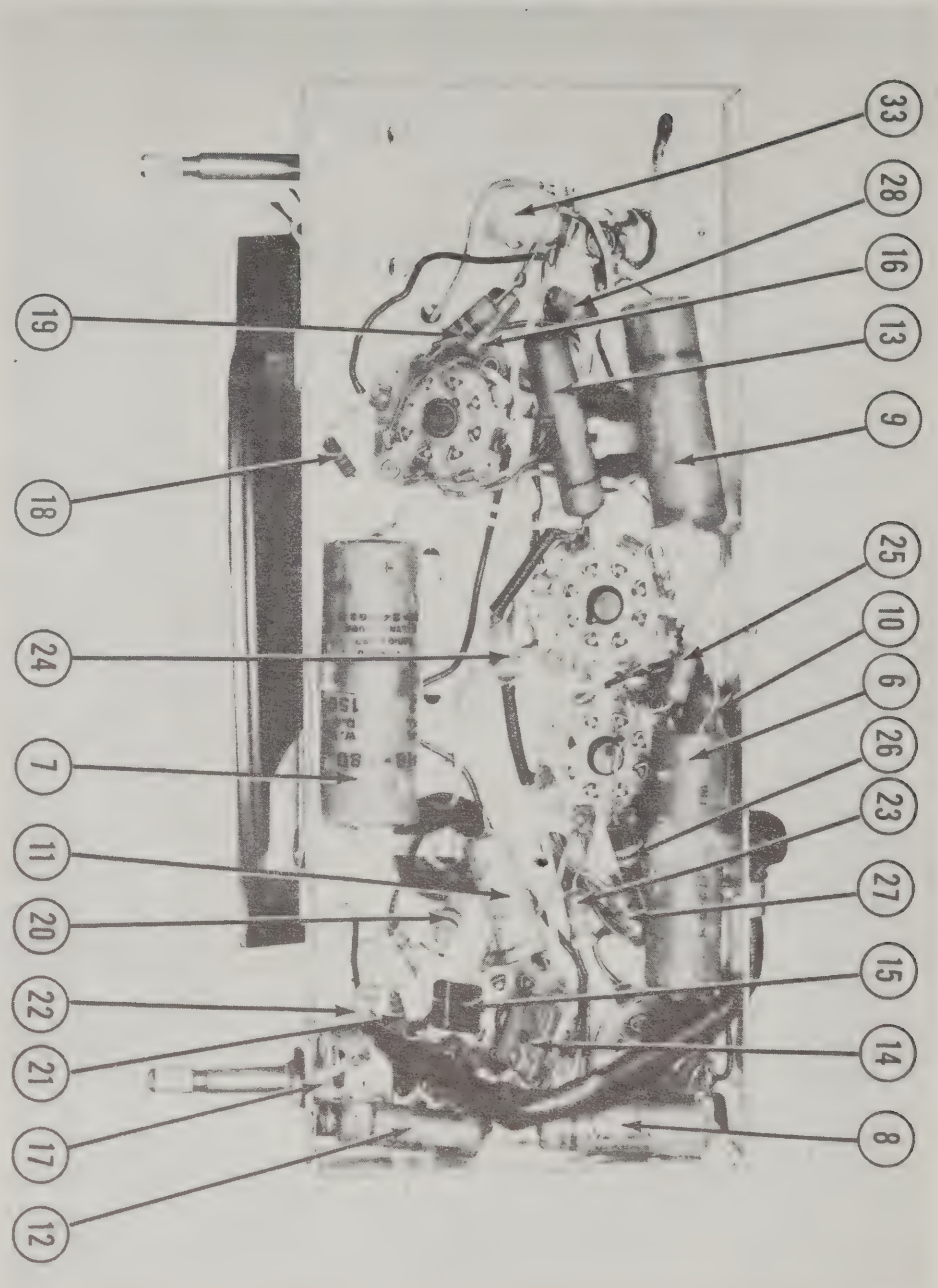
MISCELLANEOUS

ITEM No.	PART NAME	CLARION PART No.	NOTES
37	Tuning Cap.	B19-180	2 Gang Variable Cap.
	Cabinet	D42-376	Molded Bakelite (Mahogany)
	"	A42-398	" " (Ivory)
	Dial Scale	C67-490	
	Knob	A52-181	(Mahogany)
	"	A52-189	(Ivory)
	Dial Pointer	A58-46	

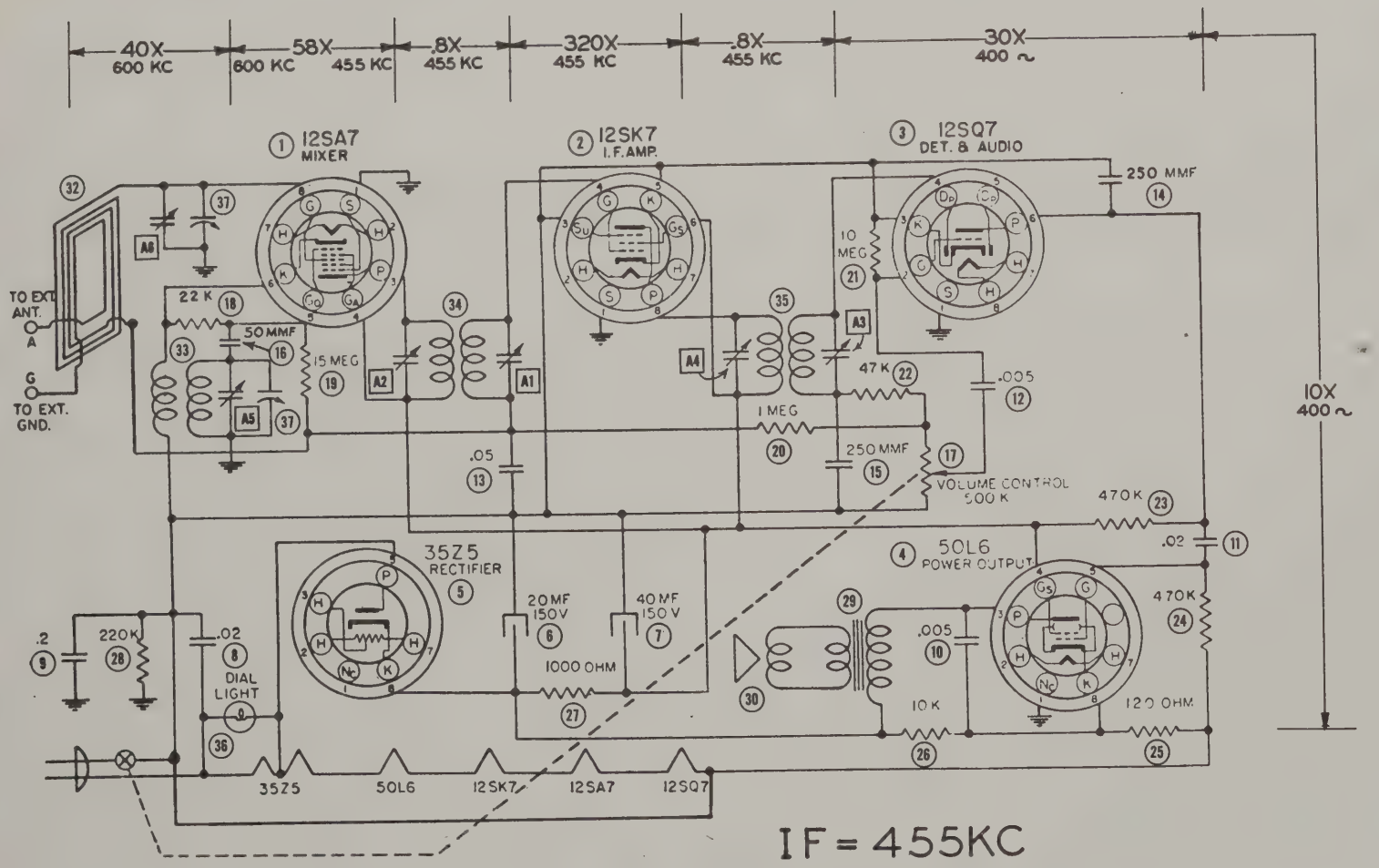


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



CLARION MODEL C-102



Pin No.	12SA7 Volt.	12SA7 Res	12SK7 Volt	12SK7 Res.
1	0V.	200 KΩ	0V.	200KΩ
2	12V. AC	11Ω	23V. AC	22Ω
3	90V. DC	10KΩ	0V.	0Ω
4	90V. DC	10KΩ	-.5V. DC	1.4MEG
5	-4.2V. DC	23KΩ	0V.	0Ω
6	0V.	.5Ω	90V. DC	10KΩ
7	23V. AC	22Ω	35V. AC	33Ω
8	-.5V. DC	1.4MEG	90V. DC	10KΩ

Pin No.	12SQ7 Volt.	12SQ7 Res	50L6GT Volt	50L6GT Res.
1	0V.	200KΩ	0V.	200KΩ
2	-.8V. DC	10MEG	87V. AC	78Ω
3	.0V.	0Ω	109V. DC	9KΩ
4	-.3V. DC	520KΩ	90V. DC	10KΩ
5	-.5V. DC	1.4MEG	0V.	390KΩ
6	58V. DC	480KΩ	0V.	INF
7	12V. AC	11Ω	35V. AC	33Ω
8	0V.	0Ω	5.6V. DC	107Ω

Pin No.	35Z5GT Volt.	35Z5GT Res
1	0V.	INF
2	117V. AC	105Ω
3	113V. AC	102Ω
4	0V.	INF
5	113V. AC	102Ω
6	0V.	INF
7	87V. AC	78Ω
8	115V. DC	9KΩ

IF = 455KC

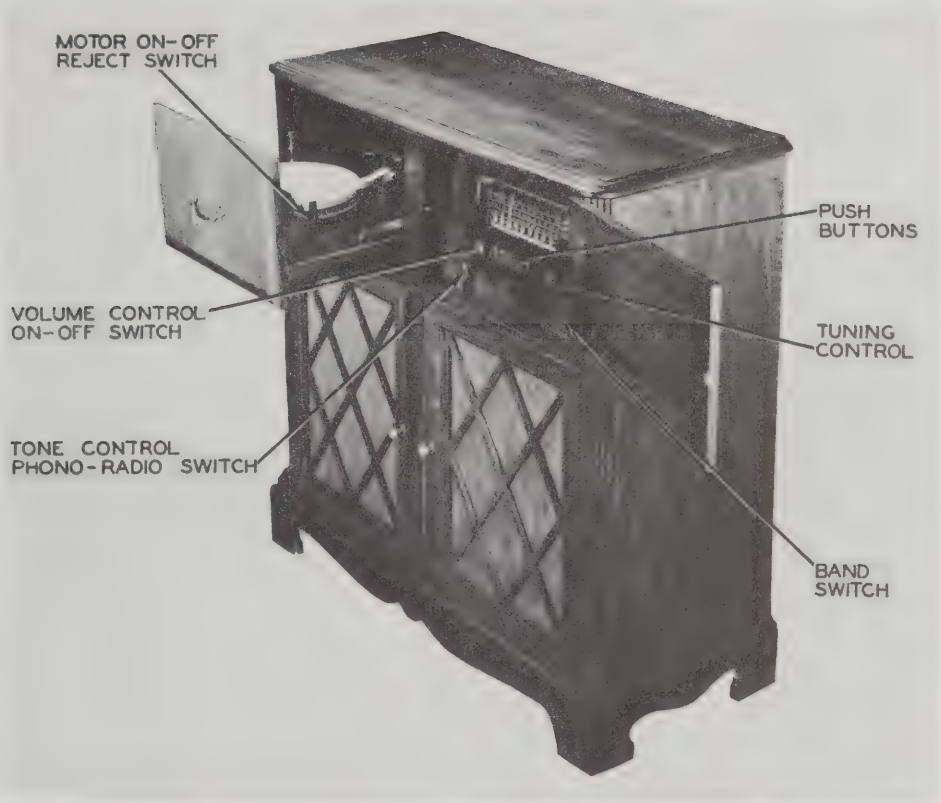
469-6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

CORONADO
MODEL 43-7651



CORONADO MODEL 43-7651

TRADE NAME	Coronado Model 43-7651
SUPPLIER	Coronado - Minneapolis, Minn. & Los Angeles, Calif.
TYPE SET	AC Operated Combination Automatic Phono. - 5 Band Superheterodyne Receiver, Self Contained Loop Antenna
TUBES (EIGHT)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6J5GT Inverter, 2-6K6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC RATING .610 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1600KC SHORT WAVE 5.96-6.19MC, 9.1-10MC, 11.45-12.16MC, 14.94-15.46MC

ALIGNMENT INSTRUCTIONS

Remove dial from cabinet. Set tuning mechanism so that core bar is 1/32 of an inch from stops at high freq. end. (Slugs out of coils). With tuning mechanism in this position, mount dial on top of the tuning assembly so that pointer reads 1600KC. Turn dial drive fully counter-clockwise and adjust cores of broadcast coils so that end of core is 1-5/32" from end of coil. (See sketch). Adjust cores of 9MC coils so that end of core is 1-1/16" from end of coil. (See sketch). Volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting. After alignment is completed, mount dial in cabinet. Set tuning mechanism so that core bar is 1/32 of an inch from stops at high freq. end. Mount chassis in cabinet, taking care that tuning mechanism is not moved, and check pointer setting. If not at 1600KC. move pointer on string to 1600KC point.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 8 (grid) of 6SA7. Low side to chassis.	455KC	BC	1600KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
200 MMF.	High side to ext. ant. lead. Low side to ext. ground lead.	1600KC	"	"	"	A5,A6, A7.	Adjust for maximum output in order given.
200 MMF.	"	1400KC	"	Tune for maximum output.	"	A8,A9.	Adjust slugs for maximum output. Recheck A5,A6,A7, at 1600KC.
400 ohms	"	9.6MC	31 meter	9.6MC	"	A10,A11 A12.	Adjust for maximum output in order given.
400 ohms	"	6.1MC	49 "	6.1MC	"	A13,A14 A15.	"
400 ohms	"	11.8MC	25 "	11.8MC	"	A16,A17 A18.	"
400 ohms	"	15.2MC	19 "	15.2MC	"	A19,A20 A21.	"

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Inverter	6J5GT	6J5GT	6Q	
6	Pwr. Output	6K6GT	6K6GT	7S	
7	Pwr. Output	6K6GT	6K6GT	7S	
8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CORONADO PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
9A	15	450	119109	DY-3x15-450	EL-344	AEF222J	UP6CJ47	FP390	■ Filter
B	15	450							▲ "
C	10	350							"
10	.02	600	C-8J-11321	S-6-02	TC-12	684-02	DT6S2	TP412	Line Bypass
11	.02	600	C-8J-11321	S-6-02	TC-12	684-02	DT6S2	TP412	" "
12	.004	600	C-8D-10768	S-6-004	TC-24	684-002	DT6D2	TP407	6K6 Plate Bypass
13	.05	400	C-8D-10813	S-4-05	TC-15	484-05	DT4S5	TP426	Audio Coupling
14	.05	200	C-8D-10770	S-4-05	TC-15	484-05	DT4S5	TP426	" "
15	.02	400	C-8D-10774	S-4-02	TC-12	484-02	DT4S2	TP423	" "
16	.005	600	C-8D-10935	S-6-005	TC-25	684-005	DT6D5	TP408	Tone Compensation
17	.006	600	C-8D-10785	S-6-006	TC-26	684-006	DT6D6	TP409	Audio Coupling
18	.03	200	C-8D-10992	S-6-03	TC-13	484-03	DT4S3	TP424	Tone Compensation
19	.02	400	C-8D-10774	S-4-02	TC-12	484-02	DT4S2	TP423	AVC Filter
20	.1	200	C-8D-10771	S-4-1	TC-1	484-.1	DT4P1	TP428	IF Cath. Bypass
21	.1	200	C-8D-10771	S-4-1	TC-1	484-.1	DT4P1	TP428	RF Cath. Bypass
22	.1	400	C-8D-10760	S-4-1	TC-1	484-.1	DT4P1	TP428	RF Bypass Pwr. Supp.
23	.1	400	C-8D-10760	S-4-1	TC-1	484-.1	DT4P1	TP428	" " " "
24	220	500	C-8F3-10	MO.5-32	1FM-32	1468-0002	5W5T2	MC237	Audio Plate Bypass
25A	50		129165b						Diode Filter
b	50								" "
26	470	500	C-8F3-12	MO.5-35	1FM-35	1468-0005	5W5T5	MC245	Ant. Coupling
27	2000	500	B-8F-10767	MW.5-22	1FM-22	1467-002	1W5D2	MC457	RF Coupling
28	470	500	C-8F3-121	MO.5-35	1FM-35	1468-0005	5W5T5	MC245	" "
29	10	500	B-8F5-101	MOS.5-41	MS-41	1469-00001	5R5Q1	MCB215	" "
30	470	500	C-8F3-121	MO.5-35	1FM-35	1468-0005	5W5T5	MC245	" "
31	47	500	B-8F3-109	MO.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
32	200	500	B-8F-10763	MOS.5-32	MS-32	1469-0002	5R5T2	MCB237	Fixed Trimmer

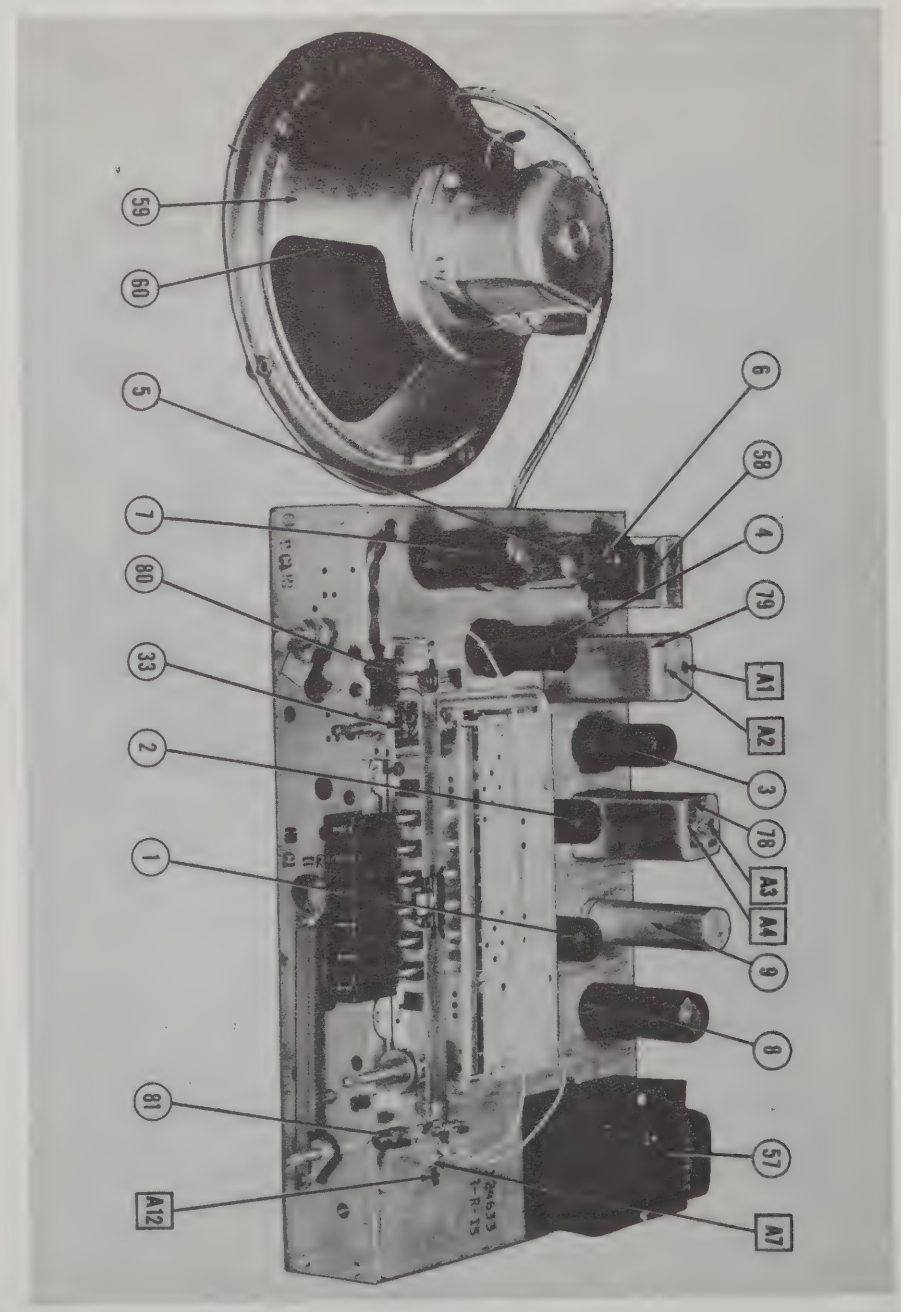
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
33A	500KΩ	1	A-10A-10588	TM233	D1A-133X	AT-88	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 33A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
34A	1 Meg.	1	125180	MK402	D1A-137	AM-63-Z	Tone Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 34A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
35	22KΩ	½	C-9B1-21	BTS-22K	Red-Red-Or. Loop Loading
36	22KΩ	½	C-9B1-21	BTS-22K	Red-Red-Or. External Ant. Loading
37	1 Meg.	½	C-9B1-31	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
38	270Ω	½	C-9B1-55	BW-½-270	Red-Vi.-Br. RF Cathode
39	4700Ω	½	C-9B1-70	BTS-4700	Yl.-Vi.-Red RF Plate Load
40	1 Meg.	½	C-9B1-31	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
41	27KΩ	½	C-9B1-79	BTS-27K	Red-Yl.-Or. Osc. Grid
42	47Ω	½	C-9B1-46	BW-½-47	Yl.-Vi.-Blk. Parasitic Suppressor
43	560Ω	½	C-9B1-59	BTS-560	Grn.-Blue-Br. IF Cathode

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CORONADO PART No.	IRC PART No.	
44	1.5MΩ	½	10682	AB-12500	IF Screen Dropping
45	47KΩ	½	C-9B1-23	BTS-47K	Yl.-Vi.-Or. IF Filter
46	3.3 Meg.	½	C-9B1-34	BTS-3.3 Meg	Or.-Or.-Grn. AVC Network
47	4.7 Meg.	½	C-9B1-35	BTS-4.7 Meg	Yl.-Vi.-Grn. 1st AF Grid
48	220KΩ	½	C-9B1-27	BTS-220K	Red-Red-Yl. 1st AF Plate Load
49	15KΩ	½	C-9B1-20	BTS-15K	Br.-Grn.-Or. Tone Compensation
50	100KΩ	½	C-9B1-26	BTS-100K	Br.-Blk.-Yl. Inverter Plate Load
51	1 Meg.	½	C-9B1-31	BTS-1 Meg.	Br.-Blk.-Grn. Inverter Grid
52	100KΩ	½	C-9B1-26	BTS-100K	Br.-Blk.-Yl. Inverter Cathode Load
53	4700Ω	½	C-9B1-70	BTS-4700	Yl.-Vi.-Red Inverter Cathode Bias
54	470KΩ	½	C-9B1-29	BTS-470K	Yl.-Vi.-Yl. Output Grid
55	470KΩ	½	C-9B1-29	BTS-470K	Yl.-Vi.-Yl. Output Grid
56	330Ω	1	C-9B2-56	BW-1-330	Or.-Or.-Br. Output Cathodes

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			INSTALLATION NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	CORONADO PART No.	STANCOR PART No.	THORDARSON PART No.	
57	117VAC @ .610A	680VCT @ .066A	5.1VAC @ 1.8A	6.5VAC @ 2.8A	104202B	P-6120*	T-22R20*	*Use mounting slots provided on chassis.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CORONADO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
58	14400Ω	4Ω	670Ω	.4Ω	B-12C-10234	A-3856	T-22S561		†Drill one new mounting hole.

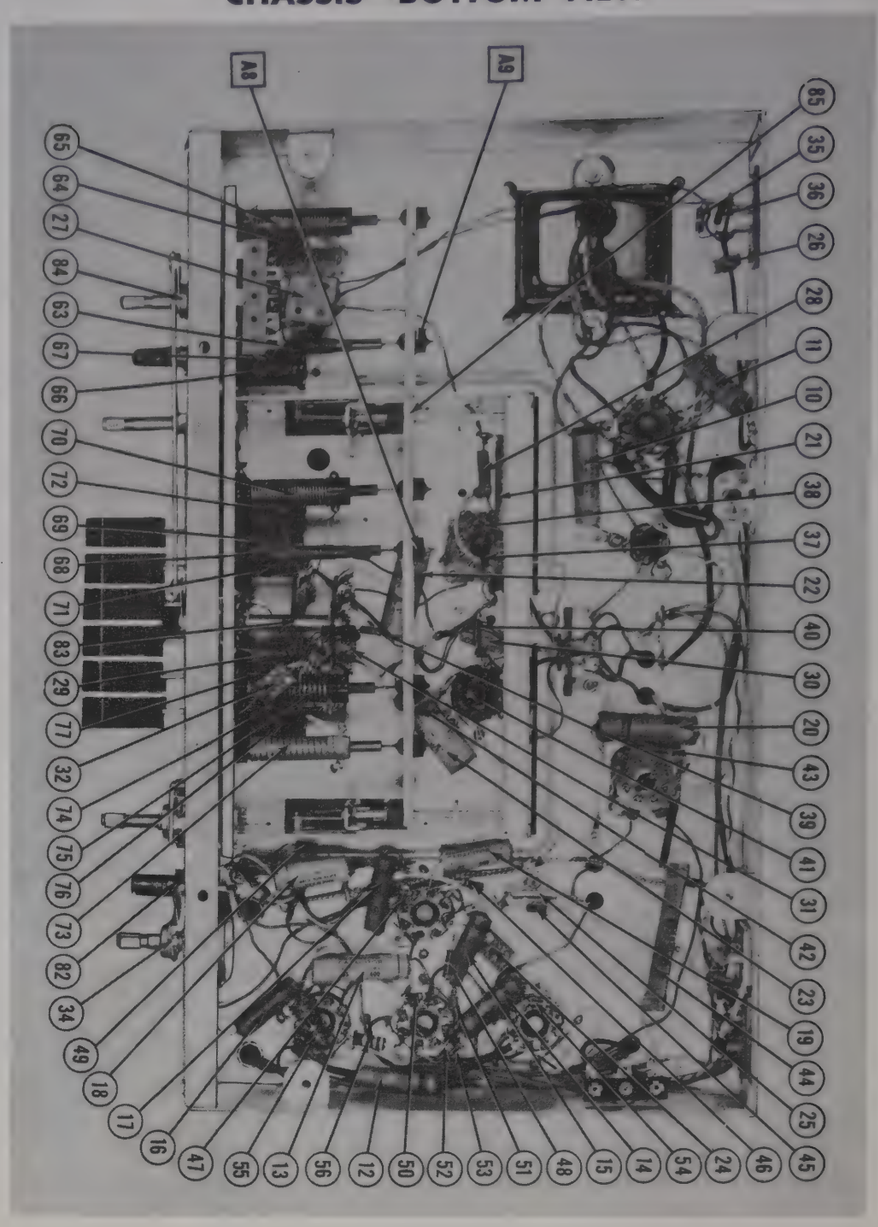
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CORONADO PART No.	JENSEN PART No.		
	FIELD RES.	VC IMP.				
59	450Ω	4Ω	B-18B-10617			
	CONE DIA.	VC DIA.				
60	9-3/4"	1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	CORONADO PART No.	MEISSNER PART No.	
61	BC Loop Ant.	0Ω				
62	LoopLoad Ch.	0Ω		A-16A-11113		Items 61 & 62 are loacted on back frame of cabinet.
63	BC Ant.Coil		6.5Ω	111195‡		
64	6MC " "		.1Ω	111189		
65	9MC " "	.1Ω	0Ω	111190‡		
66	12MC" "		0Ω	111191		
67	15MC" "		0Ω	111192		
68	BC RF Coil		6Ω	10962‡		
69	6MC RF Coil		.1Ω	10958		
70	9MC RF Coil	1Ω	0Ω	10959‡		
71	12MC RF Coil		0Ω	10960		
72	15MC RF Coil		0Ω	10961		
73	BC Osc. Coil	.5Ω	6.5Ω	110161‡		
74	6MC " "		.1Ω	110156		
75	9MC " "		0Ω	110157‡		
76	12MC" "		0Ω	110158		
77	15MC" ""		0Ω	110159		
78	Input IF	20Ω	20Ω	108177	16-6658	
79	Output IF	10Ω	9.5Ω	108176	16-6660	‡Items 63, 65, 68, 70, 73, 75 ganged together and slug tuned

CHASSIS—BOTTOM VIEW



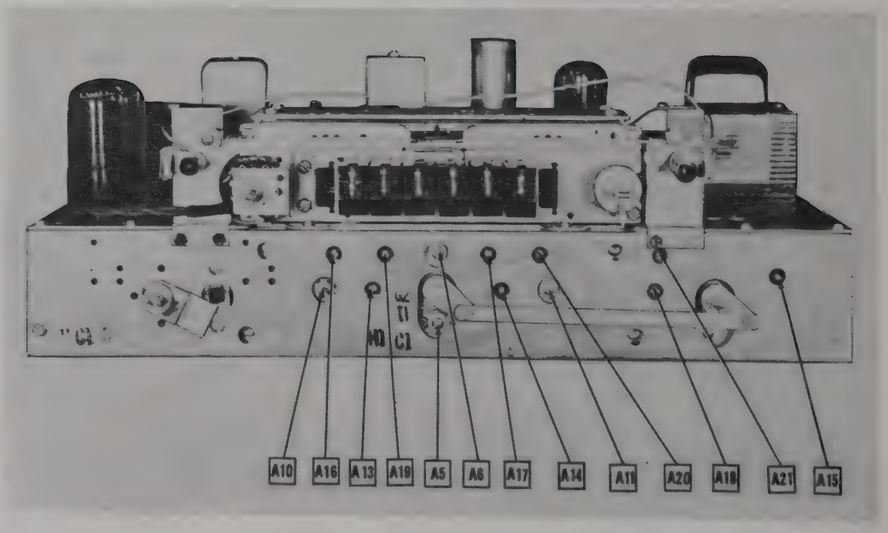
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					CORONADO PART No.		
80	Bayonet	6-8	0.25	Blue	10794		Type 44
81	"	6-8	0.25	"	10794		" "

MISCELLANEOUS

ITEM No.	PART NAME	CORONADO PART No.	NOTES
82	Radio-Phono Sw.	Part of 125180	
83	Band Switch	B-20A-10964	Antenna Section
84	" "	B-20A-10965	Osc. & RF Section
85	Tuner Assby		Removable Tuner Assby.
A5	Trimmer Cap.	124144	BC Osc. Adj. 12-27MMF
A6	" "	A-8G-7205	BC RF Adj. 120-220 MMF.
A7 A12	Trimmer Cap. " "	124143	BC Ant. Adj. 67-123 MMF. 9MC Ant. Adj. 95-175 MMF.
A10	Trimmer Cap.	124145	9MC Osc. Adj. 7-35 MMF.
A11	" "	A-8G-7206	9MC RF Adj. 60-110 MMF.
	Dial Pointer	B-2G-10588-1	
	Knob	A-5B-10893-14	Band Sw. or Radio-Phono, Walnut Cab.
	"	A-5B-10893-41	" " " " " Mahogany "
	"	128523-14	Tuning or Volume-Walnut Cab.
	"	128523-41	" " " Mahogany "
	Band Sw. Link	A-2L-11293	



PUSH BUTTON ADJUSTMENTS

1. Turn receiver on and allow to warm up for at least five minutes. Turn band switch to the "BC" position.
2. Pull button to be set up out as far as it will come.
3. Very carefully tune in the desired station.
4. Push the button in as far as it will go.
5. Follow this procedure for each of the five remaining pushbuttons.

DISASSEMBLY INSTRUCTIONS

1. Remove the following push-on type knobs: Volume control, tuning control, radio-phono & tone control, band switch.
2. Remove screw from speaker plug.
3. Disconnect speaker plug from chassis.
4. Disconnect phono-motor plug from chassis.
5. Disconnect phono-pickup plug from chassis.
6. Disconnect loop antenna plug from chassis.
7. Remove four wood screws and washers from chassis board.
8. Remove four wood screws holding the plastic dial to the cabinet. Remove the plastic dial.
9. Remove the push-on type dial pointer.
10. Remove nut and lockwasher holding speaker to cabinet. Remove speaker.

NOTE: VOLT. & RES. READINGS TAKEN IN STANDARD BROADCAST POSITION.

VOLTAGE READINGS

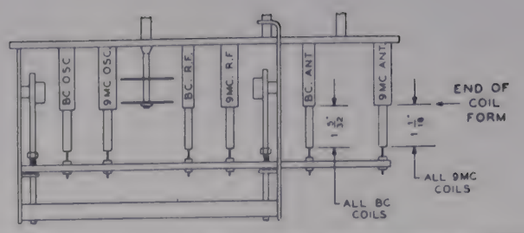
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V	0V	0V	-.05V DC	3V DC	107V DC	6.35VAC	268VDC
2	6SA7	0V	6.35VAC	268VDC	107V DC	-2V DC	0V	0V	-.05V DC
3	6SK7	0V	0V	0V	-.35VDC	4.5V DC	107V DC	6.35VAC	268VDC
4	6SQ7	0V	-.4V DC	0V	-.35VDC	-.27V DC	110V DC	0V	6.35V AC
5	6J5GT	0V	6.35VAC	168V DC	268VDC	3.2V DC	88V DC	0V	92V DC
6	6K6GT	0V	6.35VAC	260VDC	268VDC	0V	0V	0V	21 VDC
7	6K6GT	0V	0V	260VDC	268VDC	0V	0V	6.35VAC	21 VDC
8	5Y3GT	0V	310VDC	0V	315 VAC	0V	315 VAC	0V	310 VDC

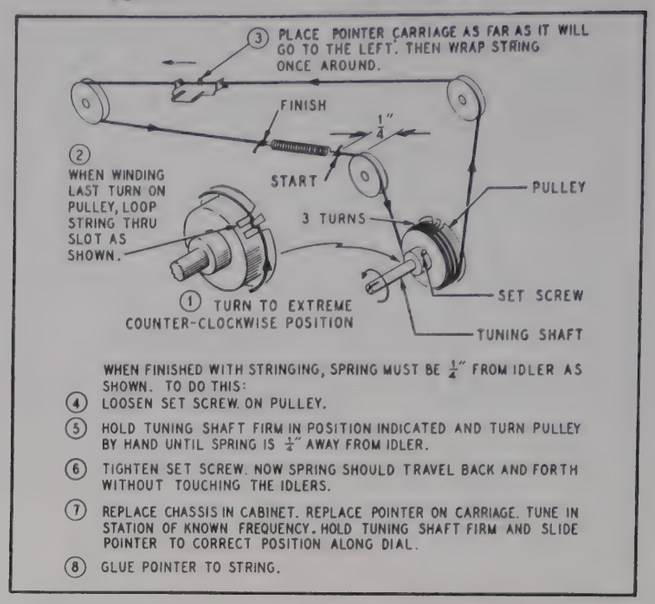
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6 SK7	0Ω	0Ω	0Ω	4 MEG	225Ω	192 KΩ	.1Ω	185KΩ
2	6 SA7	0Ω	.1Ω	180 KΩ	192 KΩ	25KΩ	.25Ω	0Ω	4 MEG
3	6 SK7	0Ω	0Ω	0Ω	3.1MEG	500Ω	192 KΩ	.1Ω	180 KΩ
4	6 SQ7	0Ω	5 MEG	0Ω	3.1MEG	470 KΩ	400 KΩ	0Ω	.1Ω
5	6 J5 GT	0Ω	.1Ω	280 KΩ	180 KΩ	900 KΩ	92 KΩ	0Ω	96KΩ
6	6 K6 GT	0Ω	.1Ω	180 KΩ	180 KΩ	370 KΩ	INF.	0Ω	310Ω
7	6 K6 GT	0Ω	0Ω	180 KΩ	180 KΩ	390 KΩ	INF.	.1Ω	310Ω
8	5 Y3 GT	INF	180 KΩ	INF	98Ω	INF	92Ω	INF	180 KΩ

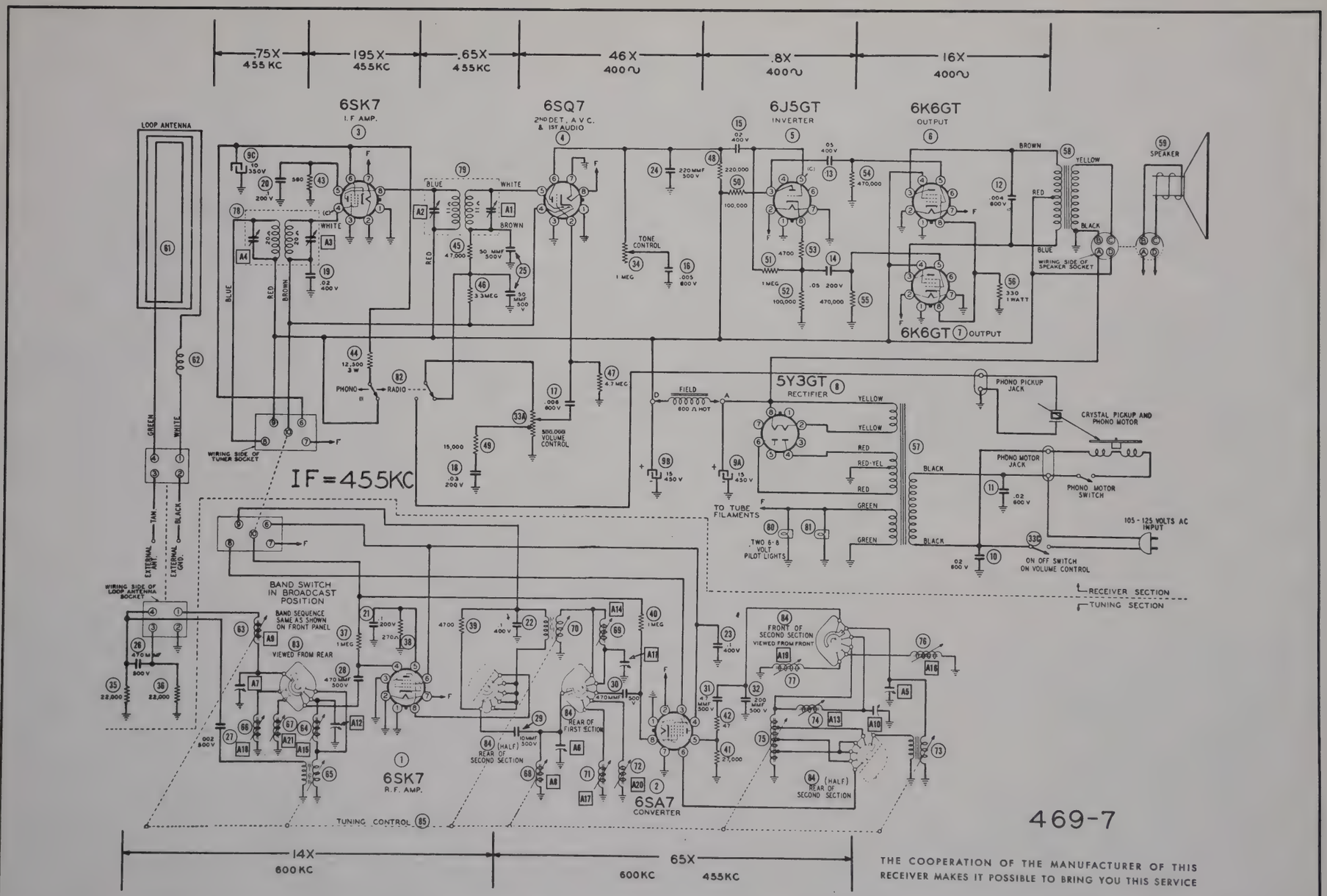
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

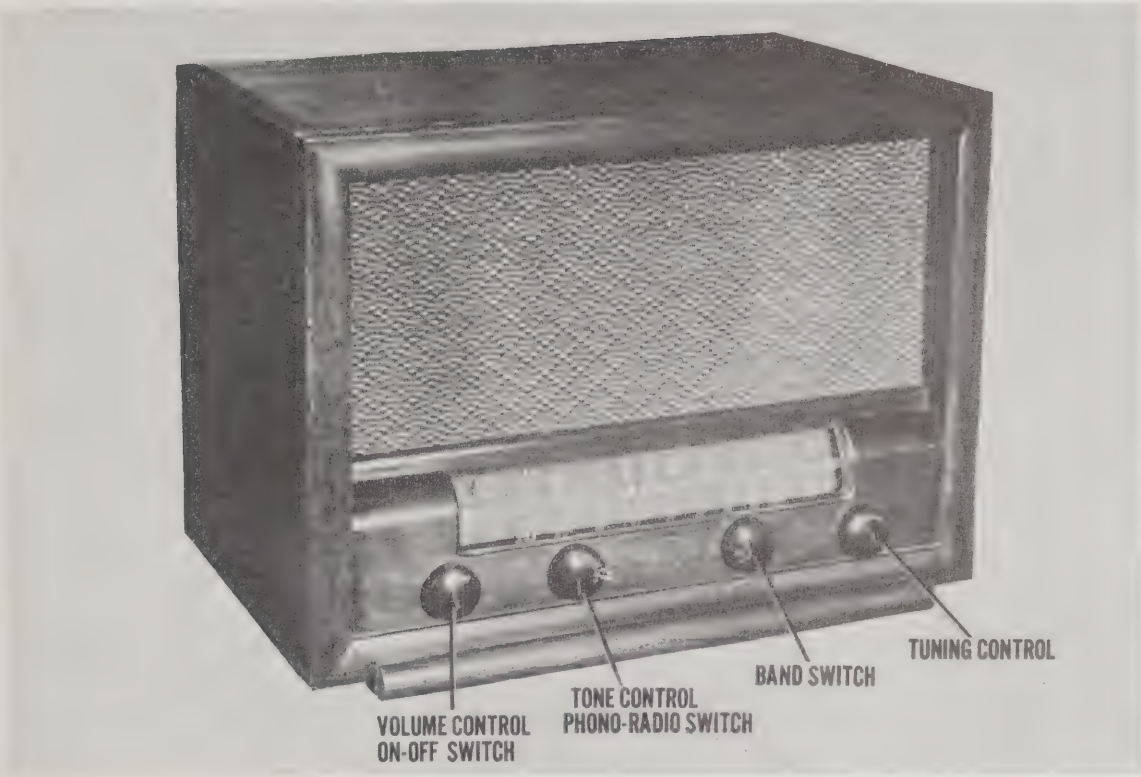



3 PLACE POINTER CARRIAGE AS FAR AS IT WILL GO TO THE LEFT. THEN WRAP STRING ONCE AROUND.
FINISH
1/4"
START
2 WHEN WINDING LAST TURN ON PULLEY, LOOP STRING THRU SLOT AS SHOWN.
PULLEY
3 TURNS
SET SCREW
1 TURN TO EXTREME COUNTER-CLOCKWISE POSITION
TUNING SHAFT
WHEN FINISHED WITH STRINGING, SPRING MUST BE 1/4" FROM IDLER AS SHOWN. TO DO THIS:
4 LOOSEN SET SCREW ON PULLEY.
5 HOLD TUNING SHAFT FIRM IN POSITION INDICATED AND TURN PULLEY BY HAND UNTIL SPRING IS 1/4" AWAY FROM IDLER.
6 TIGHTEN SET SCREW. NOW SPRING SHOULD TRAVEL BACK AND FORTH WITHOUT TOUCHING THE IDLERS.
7 REPLACE CHASSIS IN CABINET. REPLACE POINTER ON CARRIAGE. TUNE IN STATION OF KNOWN FREQUENCY. HOLD TUNING SHAFT FIRM AND SLIDE POINTER TO CORRECT POSITION ALONG DIAL.
8 GLUE POINTER TO STRING.

Replacement of Drive Cord



The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



CORONADO
MODEL 43-8576

CORONADO
MODEL 43-8576

CORONADO MODEL 43-8576

TRADE NAME	Coronado Model 43-8576
SUPPLIER	Coronado - Minneapolis, Minn. & Los Angeles, Calif.
TYPE SET	AC 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 6SA7 Converter, 6SK7 1st IF Amp., 6SF7 2nd IF-Det.-AVC, 6SJ7 1st AF Amp., 6V6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .360 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1600KC — **SHORT WAVE** 9-15.6 MC

ALIGNMENT INSTRUCTIONS

Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #8 (grid) of 6SA7. Low side to chassis.	455KC	BC B Range	Turn rotor to full open	Across voice coil	A1,A2, A3,A4	Adjust for maximum output.
100 MMFD	High side to ant. lead. Low side to chassis.	1620KC	"	"	"	A5	" " " "
100 MMFD	"	1400KC	"	Tune in 1400 KC signal. Set pointer to 1400KC.	"	A6	" " " "
100 MMFD	"	600KC	"	Tune in 600 KC signal.	"	A7	Rock rotor and adjust for maximum output. Repeat adjustments A5 at 1620KC and A7 at 600KC until no improvement can be obtained by adjusting A5.
400Ω res	"	15.6MC	SW D Range	Turn rotor to full open	"	A8	Adjust for maximum output.
400Ω res	"	14MC	"	Tune in 14MC signal.	"	A9	Rock rotor and adjust for maximum output.
100 MMFD	"	1400KC	BC B Range	Tune in 1400 KC Signal	"	A6	Adjust for maximum output. Have chassis reassembled in cabinet.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: CORONADO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6SA7	6SA7	8R	
2	1st IF Amp.	6SK7	6SK7	8N	
3	2nd IF-Det.-AVC	6SF7	6SF7	7AZ	
4	1st AF Amp.	6SJ7	6SJ7	8N	
5	Power Output	6V6GT	6V6GT	7AC	
6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	CORONADO PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	450	45X346	DY-314	EL-330	AF4444J	UP9DJ53	FP346	♠ Filter
B	40	450				PRS25-25			■ "
C	20	25							▲ "
8	.004	400		S-6-004	TC-24	484-.004	DT6D4	TP407	6V6 Plate Bypass
9	.01	400		S-4-01	TC-11	484-.01	DT4S1	TP421	Audio Coupling
10	.004	400		S-6-004	TC-24	484-.004	DT6D4	TP407	Tone Compensation
11	.025	400				484-.025	DT4S25	TP451	Audio Plate Decoup.
12	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Audio Screen Bypass
13	.005	400		S-6-005	TC-25	484-.005	DT6D5	TP408	Audio Coupling
14	.04	400		S-6-04	TC-14	484-.04	DT4S4	TP425	Tone Compensation
15	.04	400		S-6-04	TC-14	484-.04	DT4S4	TP425	Screen Bypass
16	.05	200		S-4-05	TC-15	484-.05	DT4S5	TP426	AVC Filter
17	.04	400		S-6-04	TC-14	484-.04	DT4S4	TP425	6SA7 Screen Bypass
18	.0005	200		S-6-0005	TC-35	1468-.0005	DT6T5	TP403	RF Coupling
19	330	500		M0.5-33	1FM-335	1468-.0003	5W5T3	MC241	Audio Plate Bypass
20	47	500		M0.5-45	1FM-45	1468-.00005	5W5Q5	MC225	Tone Compensation
21	68	500			MS-47	1469-.00007	5W5Q7		IF Filter Diode
22	100	500		M0.5-31	1FM-31	1468-.0001	5W5T1	MC235	" " "
23	47	500		M0.5-45	1FM-45	1468-.00005	5W5Q5	MC225	IF Coupling
24	68	500			MS-47	1469-.00007	5W5Q7		Osc. Grid Capacitor
25	286	500							Fixed Padder
26	40	500		M0S.5-44	MS-44	1469-.00004	5R5Q4	MCB223	Fixed Trimmer
27	360	500							Fixed Padder
28	47	500		M0S.5-45	MS-45	1469-.00005	5R5Q5	MCB225	Fixed Trimmer
29	270	500		M0.5-33	MS-33	1468-.0003	5W5T3	MC241	Loop Pri. Shunt
63	.2	400		S-4-2	TC-2	484-.2	5W5P2	TP429	RF Bypass Pwr. Supp.*

*Not used in all models.

CONTROLS

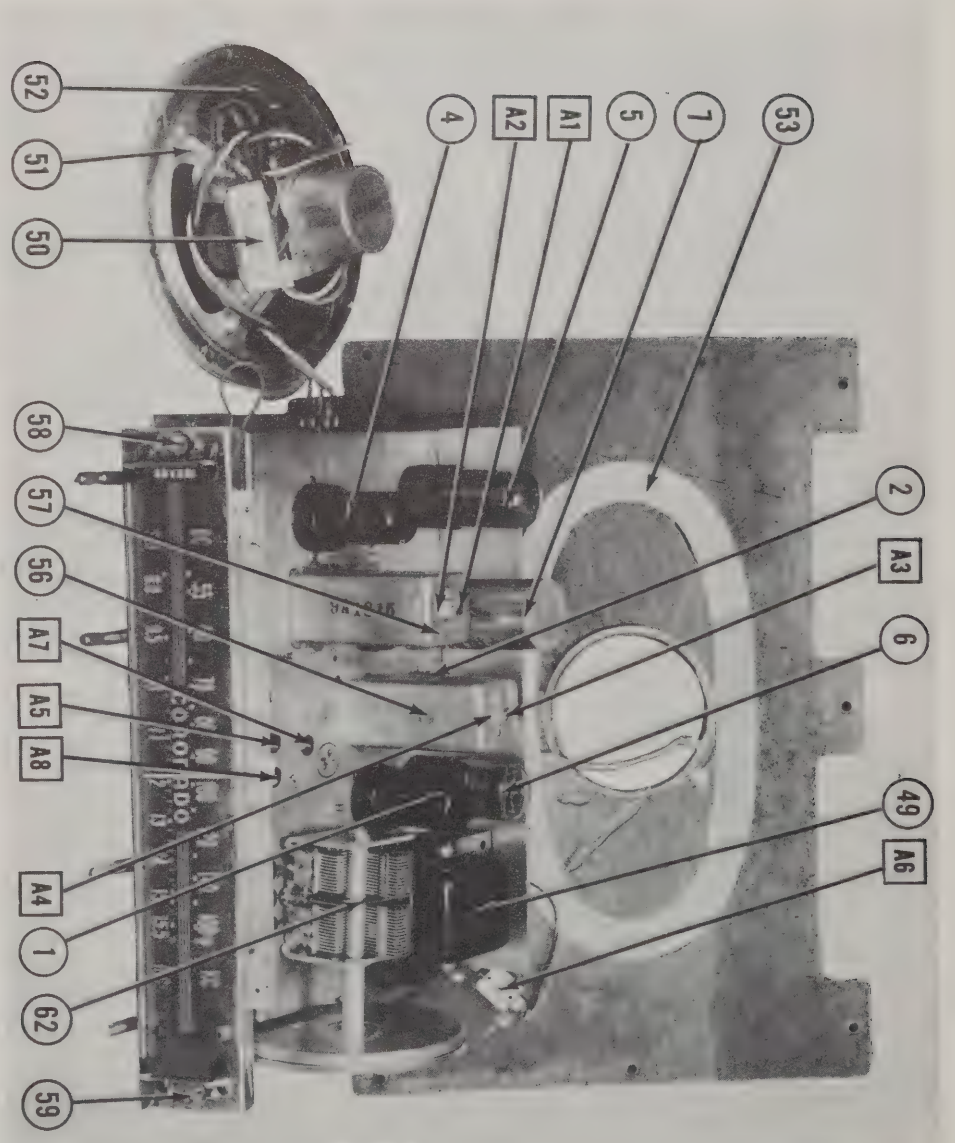
ITEM No.	RATING: RESISTANCE	RATING: WATTS	CORONADO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
30A	500KΩ	1	36X359	TM227	D13-133X	AT-92‡	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 30A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
31A	3 Meg.	1	40X278				Tone Control & Phono. Switch
B	Shaft		Not Req.				

‡Use 100KΩ tap, cut other tap off.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	CORONADO PART No.	IRC PART No.	IDENTIFICATION CODES
32	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. Converter Grid
33	39KΩ	1		BTA-39K	Or.-White-Or. Mixer Screen Dropping
34	39KΩ	½		BTS-39K	Or.-White-Or. Osc. Grid
35	39KΩ	1		BTA-39K	Or.-White-Or. IF Screen Dropping
36	2200Ω	½		BTS-2200	Red-Red-Red IF Plate Load
37	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. IF Grid
38	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
39	47KΩ	½		BTS-47K	Yl.-Vi.-Or. IF Filter
40	15KΩ	½		BTS-15K	Br.-Grn.-Or. Tone Compensation
41	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
42	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Screen Dropping

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
43	33KΩ	½		BTS-33K	Or.-Or.-Or. 1st AF Plate Load
44	82KΩ	½		BTS-82K	Gray-Red-Or. 1st AF Plate Filter
45	470KΩ	½		BTS-470K	Yl.-V1.-Yl. Output Grid
46	270Ω	1		BW-1-270	Red-V1.-Br. Output Cathode
47	2Ω	½		BW-½-2.2	Series Pilot Lights
48	1800Ω	2		BT-2-1800	Br.-Gray-Red Filter

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDARSON PART No.	INSTALLATION NOTES
49A	117VAC @ .360A	485VCT @ .060A	6.35VAC @ 2.5A		53X282		T-22R02	60 Cycle
B	117VAC				53X283			25 Cycle
C	117-234V				53X284			40-60 Cycle

Items 49A & 49B are standard power transformers. 49C is a universal type.

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
50	7160Ω	3.2Ω	450Ω	.7Ω	51X97	A-3823	T-22S47		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-110		
51	PM	3.2Ω	12A459	Mod.-P6-V		
	CONE DIA.	VC DIA.				
52	6"	9/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CORONADO PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
53	"B" Loop Ant	29Ω	1.5Ω		14-1044	Items 55A & B wound on same form
54	"D" Ant.Coil	1Ω	0Ω			
55A	"B" Osc. "	1Ω	2Ω			
B	"D" " "		0Ω			
56	Input IF	22Ω	20.5Ω		16-6658	
57	Output IF	19.5Ω	18.2Ω		16-6660	

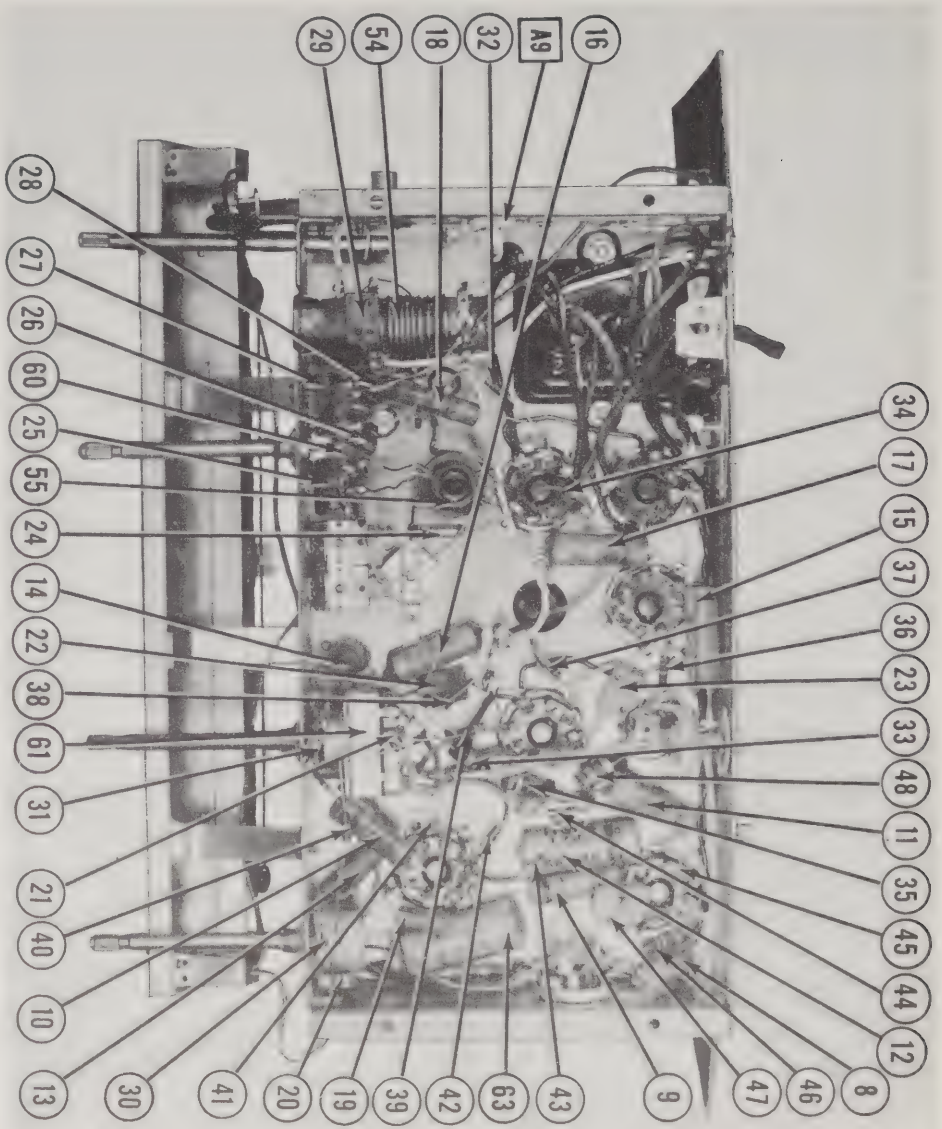
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CORONADO PART No.		INSTALLATION NOTES
58	Bayonet	6-8	0.15	Brown			Type 47
59	"	6-8	0.15	"			" "

MISCELLANEOUS

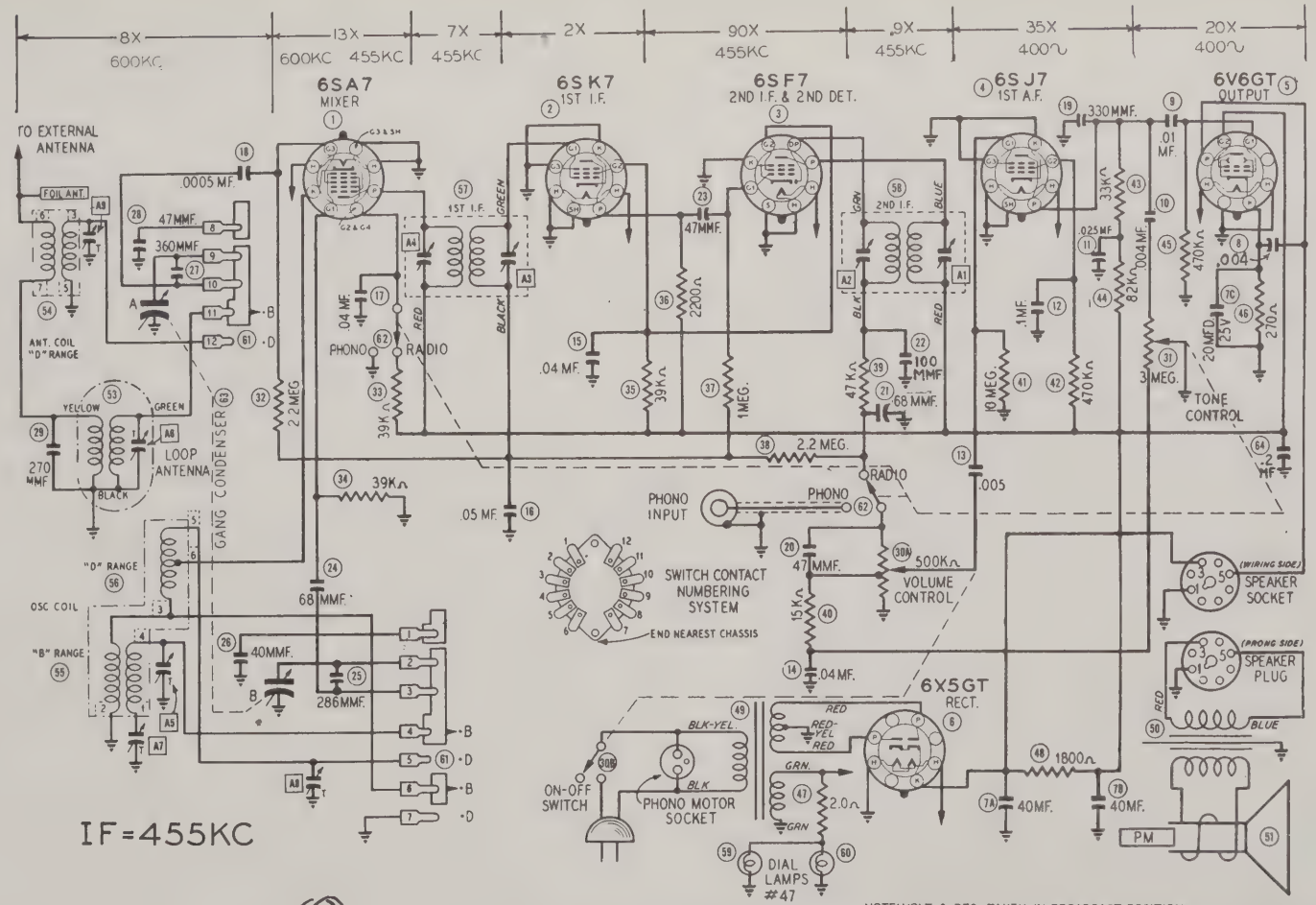
ITEM No.	PART NAME	CORONADO PART No.	NOTES
60	Band Switch	2A345	
61	Switch		Radio-Phono (on Tone Control)
62	Tuning Cap.	14A178	
A5	Trimmer Cap.	17A109	BC Osc. Adj. 2.5-35MMF.
A8	" "		SW " " 2.5-35MMF.
A6	Trimmer Cap.	17A123	BC Ant. Adj. 1-12 MMF.
A7	Padder Cap.	17A155	BC Osc. Pad 350-430 MMF.
A9	Trimmer Cap.	17A164	SW Ant. Adj. 5-50 MMF.

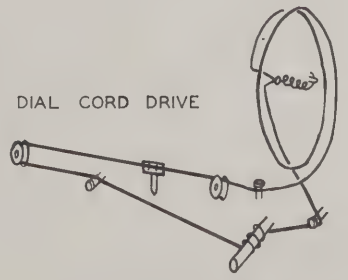
CHASSIS—BOTTOM VIEW



CORONADO
MODEL 43-8576

CORONADO
MODEL 43-8576





NOTE: VOLT. & RES. TAKEN IN BROADCAST POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0V.	0V.	202V.DC	50V.DC	-.3V. DC	0V.	6.35V.AC	0V.
2	6SK7	0V.	0V.	0V.	-.3V.DC	0V.	57V. DC	6.35VAC	190V.DC
3	6SF7	0V.	-.4V.DC	0V.	57V.DC	-.25V.DC	205V.DC	6.35VAC	0V.
4	6SJ7	0V.	0V.	0V.	-.25VDC	0V.	36V. DC	6.35VAC	37V. DC
5	6V6GT	0V.	6.35V.AC	245V.DC	200V.DC	0V.	0V.	0V.	9.8V. DC
6	6X5GT	0V.	0V.	240V.AC	0V.	240VAC	0V.	6.35VAC	260V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0∩	0∩	677K∩	716K∩	39K∩	1∩	.25∩	42MEG
2	6SK7	0∩	0∩	0∩	27MEG	0∩	716K∩	.25∩	679K∩
3	6SF7	0∩	3.6MEG	0∩	716K∩	430K∩	677K∩	.25∩	0∩
4	6SJ7	0∩	0∩	0∩	8MEG	0∩	1.2MEG	.25∩	792K∩
5	6V6GT	0∩	.25∩	675K∩	677K∩	450K∩	1NF	0∩	250∩
6	6X5GT	1NF.	0∩	195∩	1NF	182∩	1NF	.25∩	675K∩

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-8

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DALBAR
MODEL 400

DALBAR
MODEL 400

DALBAR MODEL 400

TRADE NAME	Dalbar Model 400
MANUFACTURER	Dalbar Mfg. Co., 1314 Forest Ave., Dallas 15, Texas
TYPE SET	AC-DC Superheterodyne - Self Contained Antenna Plate
TUBES (SIX)	Types, 12SK7GT RF Amp., 12SA7 Converter, 12SK7GT IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-125 Volts AC
TUNING RANGE—BROADCAST	540-1720KC RATING .250 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with low side of signal generator to chassis. Volume control in maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of front section of variable. Low side to chassis.	455KC	High freq. end of dial. (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
200 MMF.	High side to ant. lead. Low side to chassis.	1700KC	1700KC	"	A5	" " " "
200 MMF.	"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: DALBAR PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SK7GT	12SK7GT	8N	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7GT	12SK7GT	8N	
4	Det.-AVC-AF	12SQ7	12SQ7	8Q	
5	Power Output	50L6GT	50L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DALBAR PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	37A1-35	M-50+-30-150	TA-530	PRSA150-40-40	BRL3515	2N520	Filter - Red
B	30	150							" - Yellow
8	.05	600	35A6-503	S-6-05	TC-15	684-05	DT6S5	TP415	Line Filter
9	.01	600	35A6-103	S-6-01	TC-11	684-01	DT6S1	TP410	35L6 Plate Bypass
10	.01	600	35A6-103	S-6-01	TC-11	684-01	DT6S1	TP410	Audio Coupling
11	.01	600	35A6-103	S-6-01	TC-11	684-01	DT6S1	TP410	" "
12	.05	600	35A6-503	S-6-05	TC-15	684-05	DT6S5	TP415	AVC Filter
13	.002	400	35A4-202	S-6-002	TC-22	484-002	DT6D2	TP405	Ant. Coupling
14	250	500	36A2-251	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	Audio Plate Bypass
15	250	200	36A2-251	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	1F Bypass Diode
16	100	200	36A2-101	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	RF Coupling
17	100	200	36A2-101	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	" "
18	100	200	36A2-101	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DALBAR PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
19A	500KΩ	1	27E2-504	MR4o	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 19A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

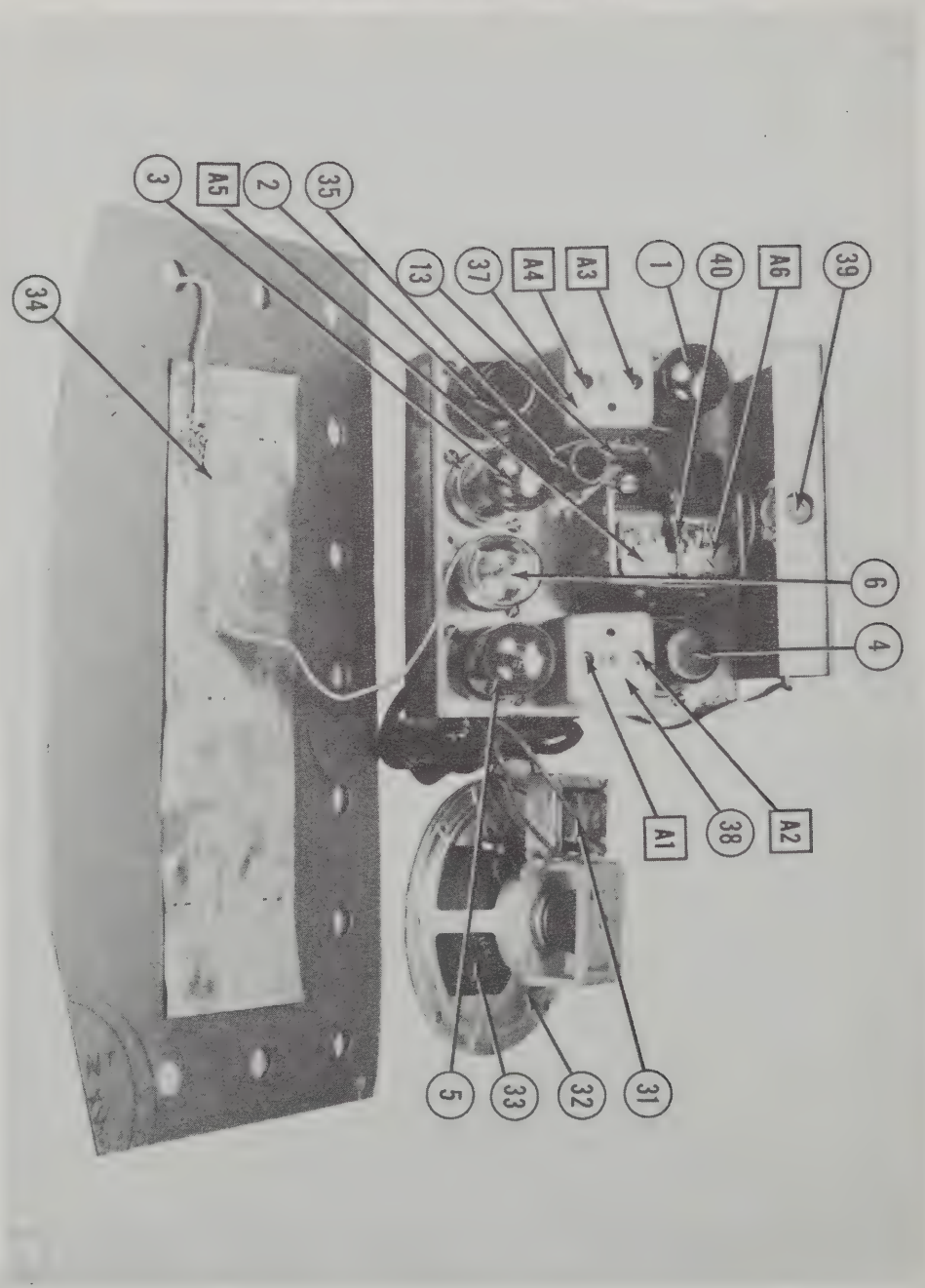
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DALBAR PART No.	IRC PART No.	IDENTIFICATION CODES
20	250KΩ	½	25C2-254	BTS-220K	Red-Grn.-Yl. AVC Network
21	3500Ω	½	25C2-352	BTS-3300	Or.-Grn.-Red RF Plate Load
22	50KΩ	½	25C2-503	BTS-47K	Grn.-Blk.-Or. Converter Grid
23	20KΩ	½	25C2-223	BTS-22K	Red-Blk.-Or. Osc. Grid
24	2.2 Meg.	½	25C2-225	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
25	250KΩ	½	25C2-254	BTS-220K	Red-Grn.-Yl. 1st AF Plate Load
26	50KΩ	½	25C2-503	BTS-47K	Grn.-Blk.-Or. IF Filter
27	10 Meg.	½	25C2-106	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
28	250KΩ	½	25C2-254	BTS-220K	Red-Grn.-Yl. Output Grid
29	150Ω	½	25C2-151	BW-½-150	Br.-Grn.-Br. Output Cathode
30	450Ω	5	26C5-451	AB-450	Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DALBAR PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
31	1950Ω	3.1Ω	158Ω	.5Ω	51B1	A-3876*	T-22545*		*Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA DALBAR PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
32	FIELD	VC IMP.	6041-S	ST-107 Mod. P5-V		
	[illegible]	3.1Ω				
33	CONE DIA. 4"	VC DIA. 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

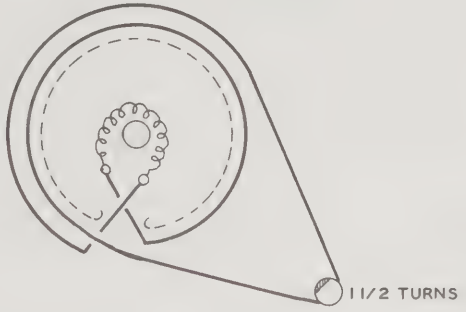
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA DALBAR PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
34	Ant. Plate					
35	Ant. Coil	3Ω	5.3Ω			
36	Osc. "		6Ω		14-1040	
37	Input IF	23.4Ω	25Ω	TS10000	16-6658	
38	Output IF	25Ω	24Ω	TS10001	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA DALBAR PART No.		INSTALLATION NOTES
39	Bayonet	6-8	0.15	Brown			Type 47

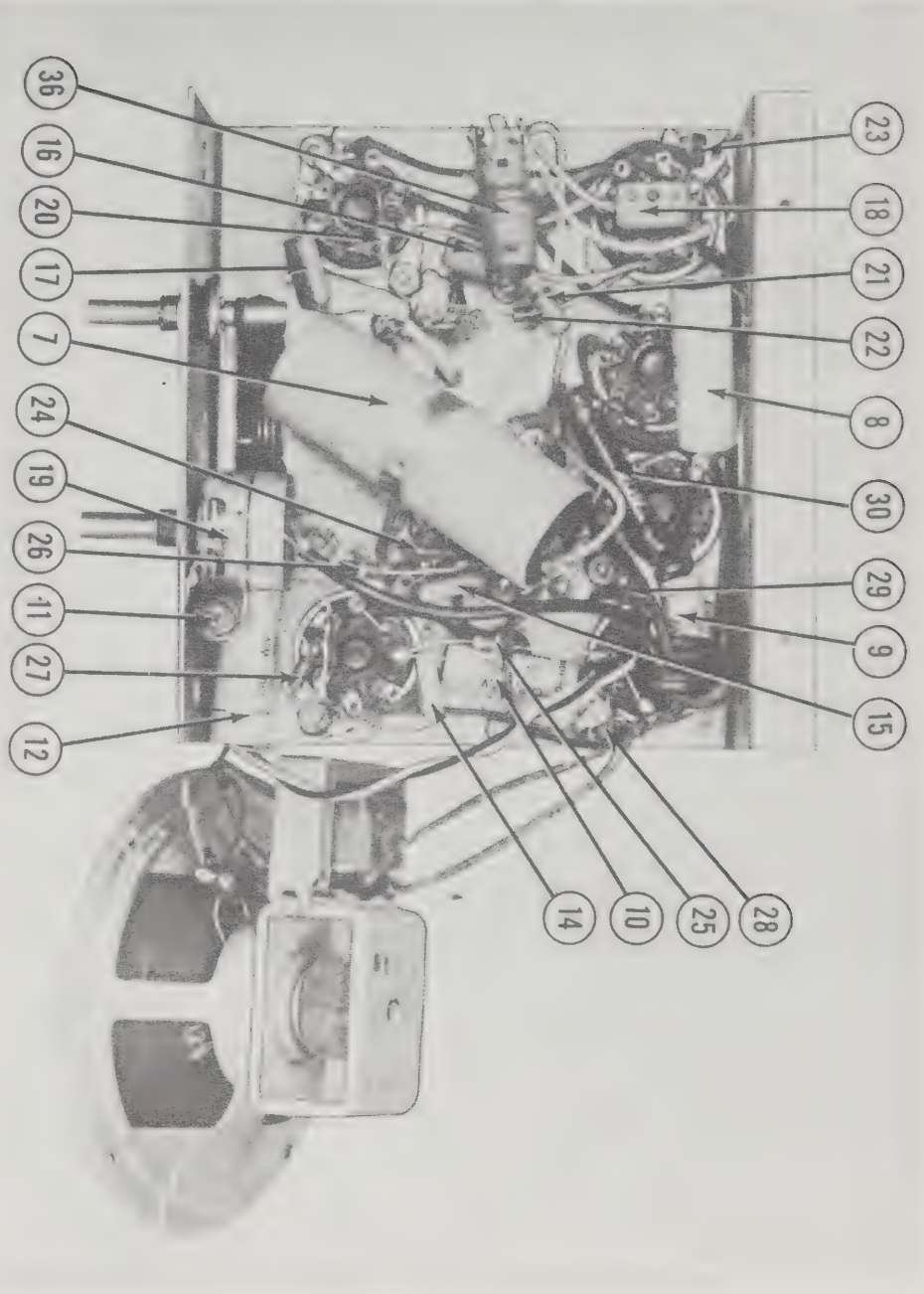
MISCELLANEOUS

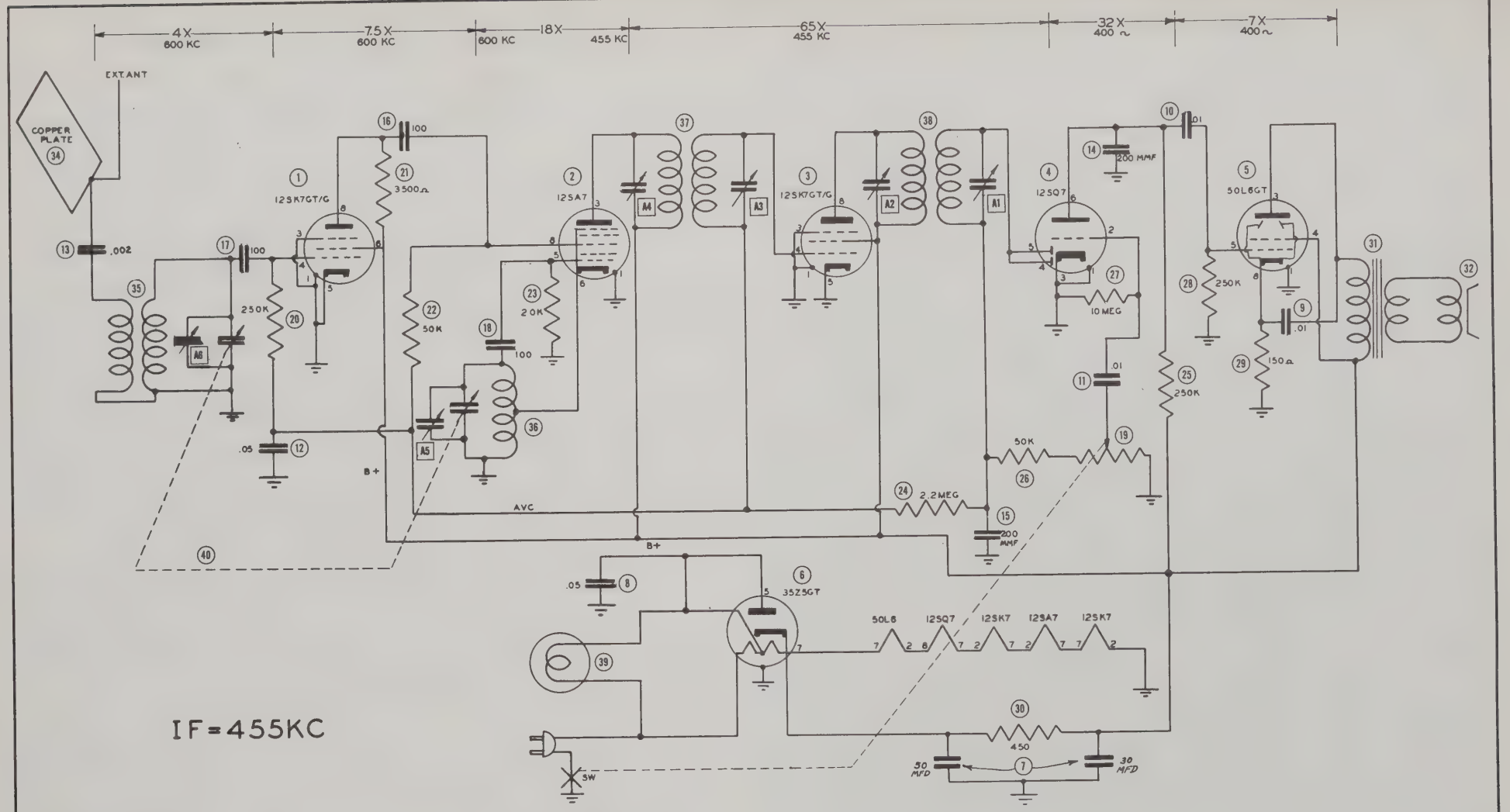
ITEM No.	PART NAME	DALBAR PART No.	NOTES
40	Tuning Cap.	38E6-401	2 Gang Variable Cap.



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0V.	0V.	0V.	-.35V.DC	0V.	85V.DC	111V.AC	50V.DC
2	12SA7	0V.	111V.AC	85V.DC	85V.DC	-9V.DC	0V.	22V.AC	-2V.DC
3	12SK7GT	0V.	32V.AC	0V.	-3V.DC	0V.	85V.DC	22V.AC	85V.DC
4	12SQ7	0V.	-.6V.DC	0V.	-3V.DC	-3V.DC	57V.DC	32V.AC	42V.AC
5	50L6GT	0V.	42V.AC	81V.DC	85V.DC	0V.	85V.DC	87V.AC	48V.DC
6	35Z5GT	0V.	117V.AC	112V.AC	0V.	112V.AC	0V.	87V.AC	117V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SK7GT	0Ω	0Ω	0Ω	3.5 MEG.	0Ω	55KΩ	12.5Ω	58KΩ
2	12SA7	0Ω	12.5Ω	55KΩ	55KΩ	18.5KΩ	.75Ω	23.5Ω	3.2 MEG.
3	12SK7GT	0Ω	35Ω	0Ω	3.2 MEG.	0Ω	55KΩ	23.5Ω	55KΩ
4	12SQ7	0Ω	1 MEG	0Ω	1.1 MEG.	1.1 MEG.	300KΩ	35Ω	46Ω
5	50L6GT	0Ω	46Ω	55KΩ	55KΩ	250KΩ	55KΩ	92Ω	140Ω
6	35Z5GT	0Ω	122Ω	118Ω	INF.	118Ω	INF.	92Ω	55KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-9

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

DETROLA
MODEL 568-13-221D

DETROLA
MODEL 568-13-221D

DETROLA MODEL 568-13-221D

TRADE NAME	Detrola Model 568-13-221D
MANUFACTURER	International Detrola Corp., 1501 Beard St., Detroit, Mich.
TYPE SET	AC-DC 2 Band Superheterodyne Receiver
TUBES (FIVE)	Types 12SA7 Converter, 12SK7GT IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC-DC — RATING .250 Amps. @ 117V AC
TUNING RANGE—BROADCAST	540-1600KC — **SHORT WAVE** 6.0-18.0 MC.

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at last reference mark at right end of dial. Use isolation transformer if available. If not, connect capacitor in series with low side of signal generator and B-. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #8 (grid) of 12SA7. Low side to B-.	455KC	BC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used, reduce dummy to .001 MFD to reduce excessive hum modulation.
"	"	1620KC	"	"	"	A5	Adjust for maximum output.
400 OHMS	High side to ant. term. Low side to B-.	18.3MC	SW	"	"	A6	"
"	"	18.0MC	"	Tune for maximum output	"	A7	"
200 MMF	"	1400KC	BC	"	"	A8	"
"	"	600KC	"	"	"	A9	Rock variable and adjust for maximum output. Recheck A5 at 1620KC and A8 at 1400KC. If A5 is changed, recheck short wave adjustments.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: DETROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7	12SQ7	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DETROLA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	A-8948	DY-40+20-150	EL-24	AF84D20A*	UP4215	FP306*	■ Filter
B	20	150							▲ "
7	.05	400	BC31B503	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
8	.002	600	BD610202	S-6-002	TC-22	684-002	DT6D2	TP405	Rect. Bypass
9	.1	400	BD410104	S-4-1	TC-1	484-.1	DT4P1	TP428	Line Isolating
10	.02	400	BD410203	S-4-02	TC-12	484-02	DT4S2	TP423	50L6 Plate bypass
11	.02	400	BD410203	S-4-02	TC-12	484-02	DT4S2	TP423	Audio Coupling
12	.01	400	BD410103	S-4-01	TC-11	484-01	DT4S1	TP421	" "
13	.05	200	BD210503	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
14	.002	600	BD610202	S-6-002	TC-22	684-002	DT6D2	TP405	Ant. Coupling
15	220	500	BM78A221	MO.5-32	1FM-32	1468-0002	5W5T2	MC237	Audio Plate bypass
16	100	500	BM78A101	Mo.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor
17	5100	300	BM58D512	MW.5-25	1FM-25	1467-005	1D5D5	MC465	Fixed Padder
18	1		B-51839-2						Neutralizing
19	2.2		B-51839-4						RF Coupling

* Do not use bypass section

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
20A	500K	1	B9051-5	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 20A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

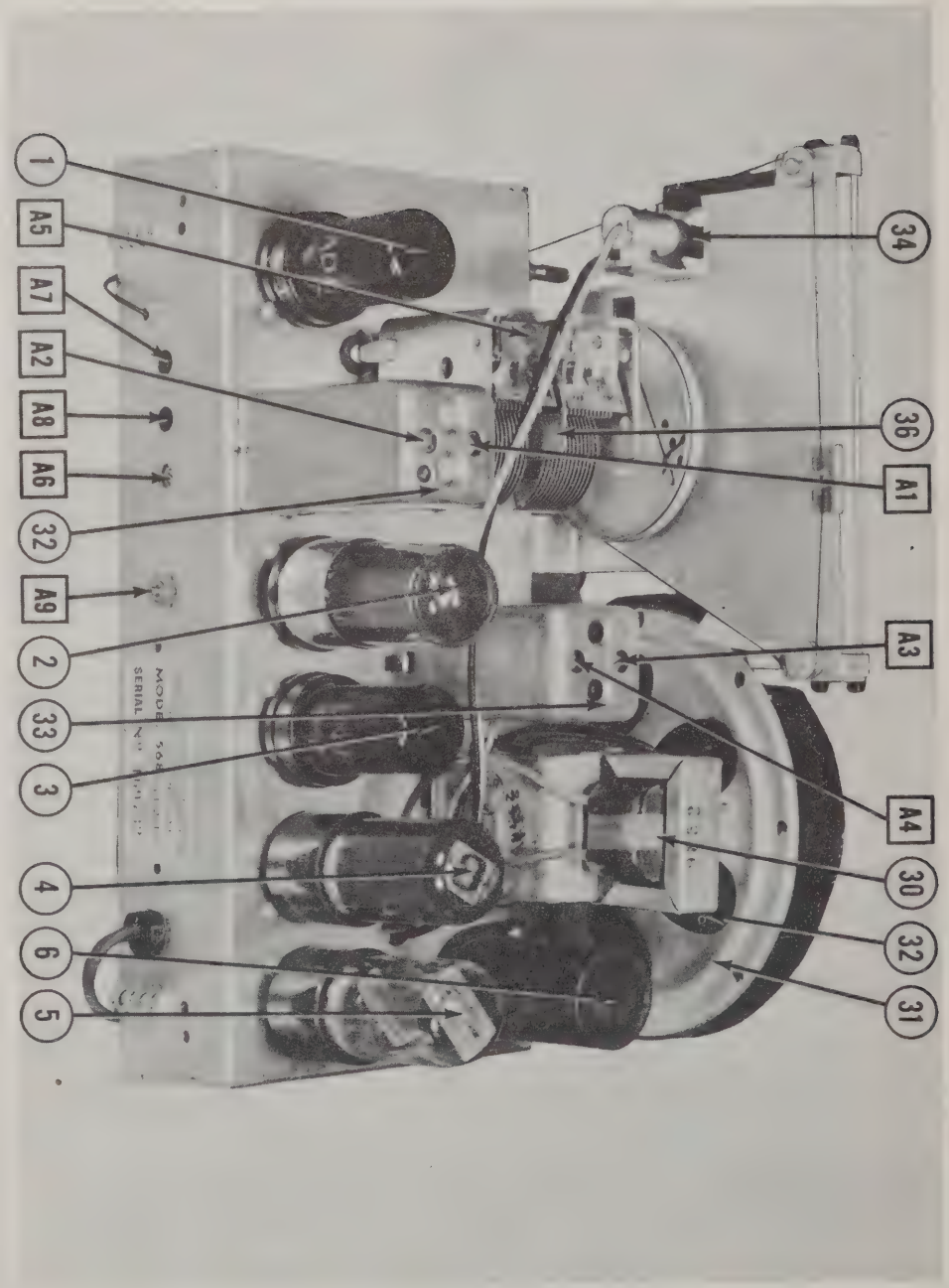
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	IRC PART No.	IDENTIFICATION CODES
21	22KΩ	1/3	BR17B223	BTS-22K	Red-Red-Or. Osc. Grid
22	150Ω	1/3	BR17B151	BW-½-150	Br.-Grn.-Br. Parasitic Suppressor
23	15 Meg.	1/3	BR17B156	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
24	3.3 Meg.	1/3	BR17B335	BTS-3.3 Meg.	Or.-Or.-Grn. " "
25	6.8 Meg.	1/3	BR17B685	BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Grid
26	470KΩ	1/3	BR17B474	BTS-470K	Yl.-Vi.-Yl. " " Plate Load
27	470KΩ	1/3	BR17B474	BTS-470K	Yl.-Vi.-Yl. Output Grid
28	150Ω	1/2	BR16C151	BW-½-150	Br.-Grn.-Br. " Cathode
29	220KΩ	1/3	BR17B224	BTS-220K	Red-Red-Yl. Line Isolating

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DETROLA PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
30	4000Ω	3.5Ω	240Ω	.7Ω		A-3856‡	T-22S46‡		‡Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA DETROLA PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
	FIELD RES.	VC IMP.		ST-4501		† Add 1500Ω 10 watt resistor in
31	350Ω	3.5Ω	C-51014	Mod. H5-S		Parallel with field coil.
	CONE DIA.	VC DIA.				
32	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

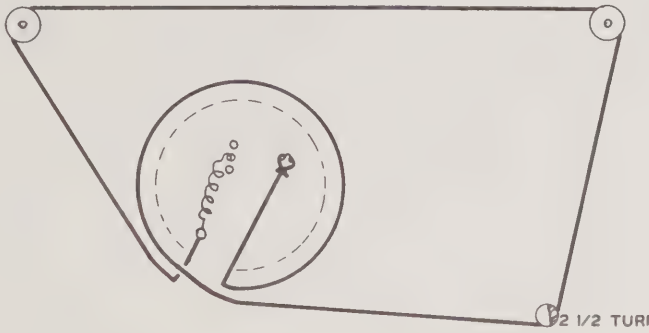
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA DETROLA PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
33A	BC Ant. Coil	50Ω	5.5Ω	B51828		Items 30A, 30B wound on same form
33B	SW Ant. Coil	.5Ω	.1Ω	B51828		
34A	BC Osc. Coil	1.5Ω	5.5Ω	B51836		Items 31A, 31B " " " "
34B	SW Osc. Coil		.4Ω	B51836		
35	Input IF	29Ω	22Ω	B51010-1	16-6658	
36	Output IF	34Ω		B51011-1	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA DETROLA PART No.		INSTALLATION NOTES
37	Bayonet	6-8	.15	Brown	A-6158		Type 47

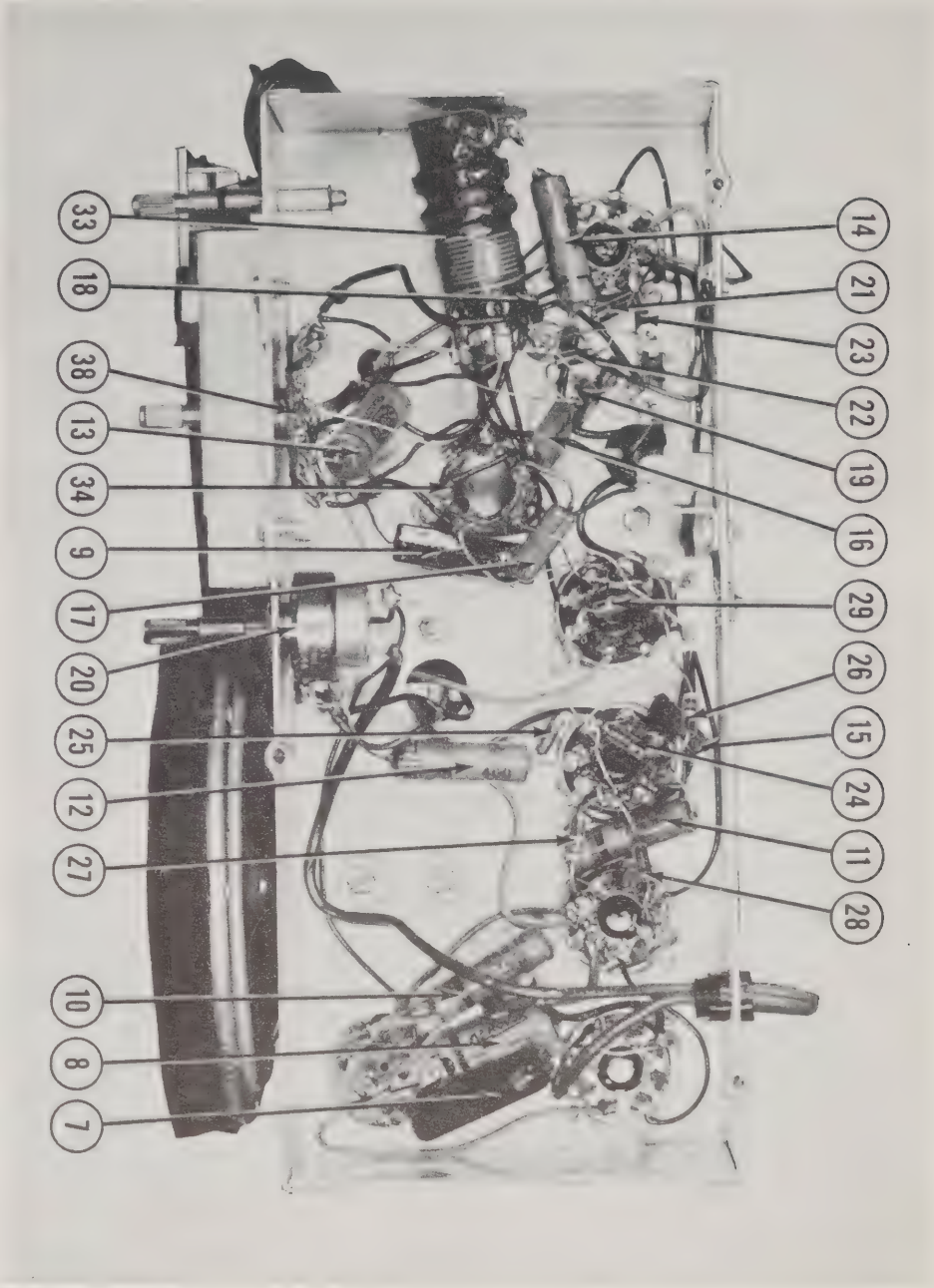
MISCELLANEOUS

ITEM No.	PART NAME	DETROLA PART No.	NOTES
38	Band Switch	B-51764-1	
39	Tuning Cap.	C-51837-1	2 Gang Variable Cap.
A6	Trimmer Cap.	A-51834	SW Osc. Adj.
A7	Trimmer Cap.		SW Ant. "
A8	Trimmer Cap.		BC " "
A9	Padder Cap.	B-51428-5	BC Osc. Pad.
	Ant. Reel Assby.	A-51869	

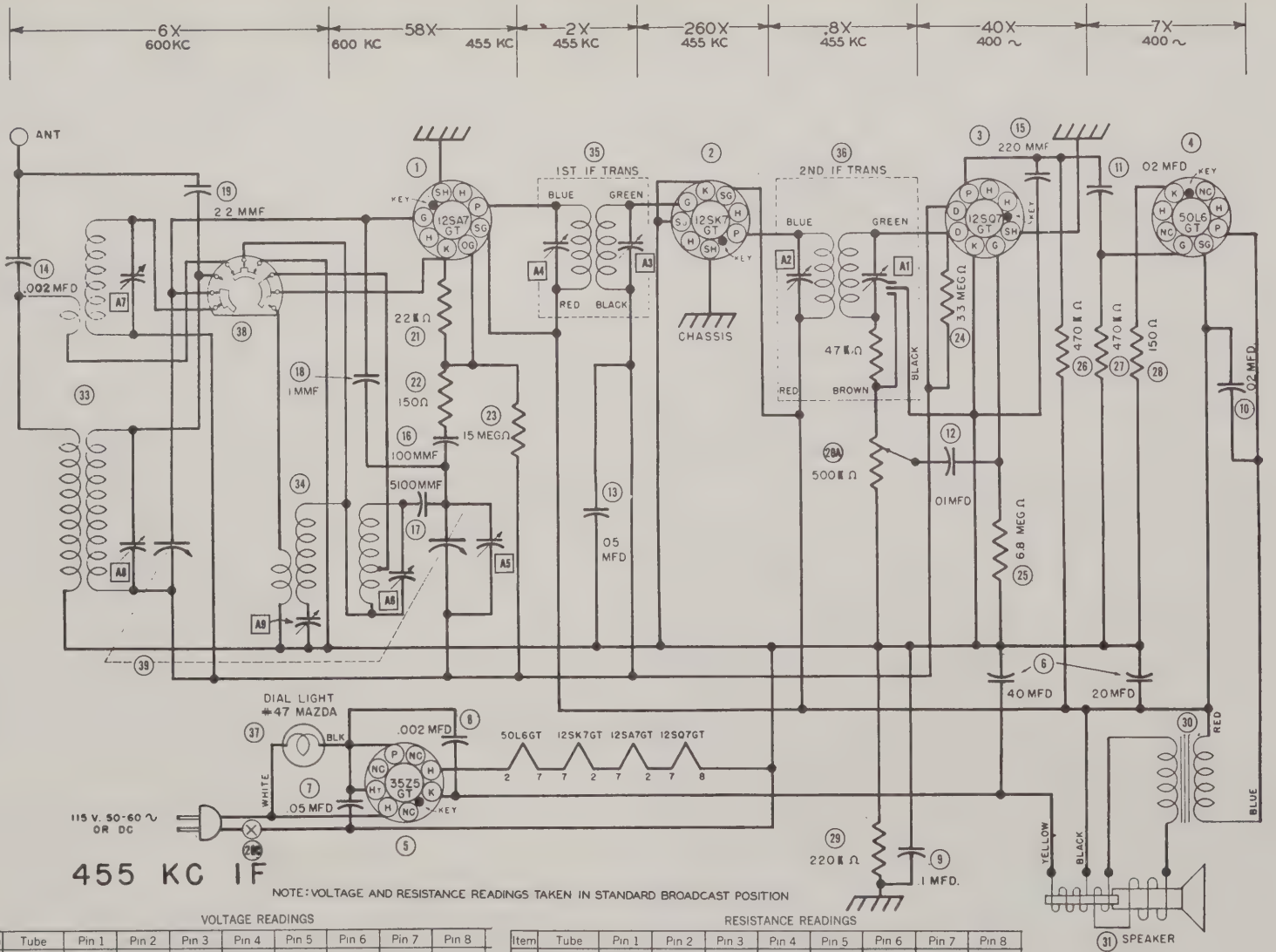


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



568-13-221D
DETROLA MODEL



NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V.	12V.AC	97V.DC	98V.DC	-.4V.DC	0V.	24.5V.AC	-5V.DC
2	12SK7GT	0V.	24.5V.AC	0V.	-.5V.DC	0V.	98V.DC	36.8VAC.	97V.DC
3	12SQ7	0V.	-.75V.DC	0V.	-.5V.DC	-.5V.DC	55V.DC	12VAC	0V.
4	50L6GT	0V.	87V.AC	92V.DC	98V.DC	0V.	0V.	36.8V.AC	6.2V.DC
5	35Z5GT	0V.	117V.AC	112V.AC	0V.	112VAC	0V.	87V.AC	120V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	210 Kα	12α	110 Kα	110 Kα	24 Kα	1α	23α	2.6 MEG.
2	12SK7GT	210 Kα	23α	0α	2.6 MEG.	0α	110 Kα	36α	110 Kα
3	12SQ7	210 Kα	6 MEG.	0α	460 Kα	2.6 MEG.	580 Kα	12α	0α
4	50L6GT	INF.	80α	110 Kα	110 Kα	460 Kα	INF.	36α	150α
5	35Z5GT	INF.	109α	105α	INF.	105α	INF.	80α	110 Kα

469-10

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DETROLA
SERIES 571X, 571AX, 571BX

DETROLA
SERIES 571X, 571AX, 571BX

DETROLA MODEL 571X-21-94D

TRADE NAME	Detrola Series 571X, 571AX, 571BX
MANUFACTURER	International Detrola Corp., 1501 Beard St., Detroit, Mich.
TYPE SET	AC-DC Superheterodyne - Self Contained Antenna Plate
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7 IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1700KC RATING .245 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn tuning shaft fully counter-clockwise and set pointer at last reference mark at the left end of the dial. Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #8 (grid) of 12SA7. Low side to B-.	455KC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce excessive hum modulation.
10 MMF.	"	535KC	Low freq. end	"	A5	Adjust for maximum output.
10 MMF.	"	1400KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: DETROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7	12SK7	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: DETROLA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	A-8948	DY-40+20-150	EL-24	AF84D20A*	UP4215	FP306*	■ Filter
B	20	150							▲ "
7	.05	400	BC31B503	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
8	.02	400	BD410203	S-4-02	TC-12	484-02	DT4S2	TP423	50L6 Plate Bypass
9	.02	400	BD410203	S-4-02	TC-12	484-02	DT4S2	TP423	Audio Coupling
10	.01	400	BD410103	S-4-01	TC-11	484-01	DT4S1	TP421	" "
11	.1	400	BD410104	S-4-1	TC-1	484-.1	DT4P1	TP428	Line Isolating
12	.05	200	BD210503	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
13	.01	400	BD410103	S-4-01	TC-11	484-01	DT4S1	TP421	Osc. Feedback
14	470	500	BM78A471	MO.5-35	1FM-35	1468-0005	5W5T5	MC245	Audio Plate Bypass
15	1500	400	A-9672	MW.5-215	1FM-215	1467-0015	1W5D15	MC256	Osc. Feedback
16	100	500	BM78A101	MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor
17	3.3								Ant. Coupling

*Do not use bypass section.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	1.	B-9051-1	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 18A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

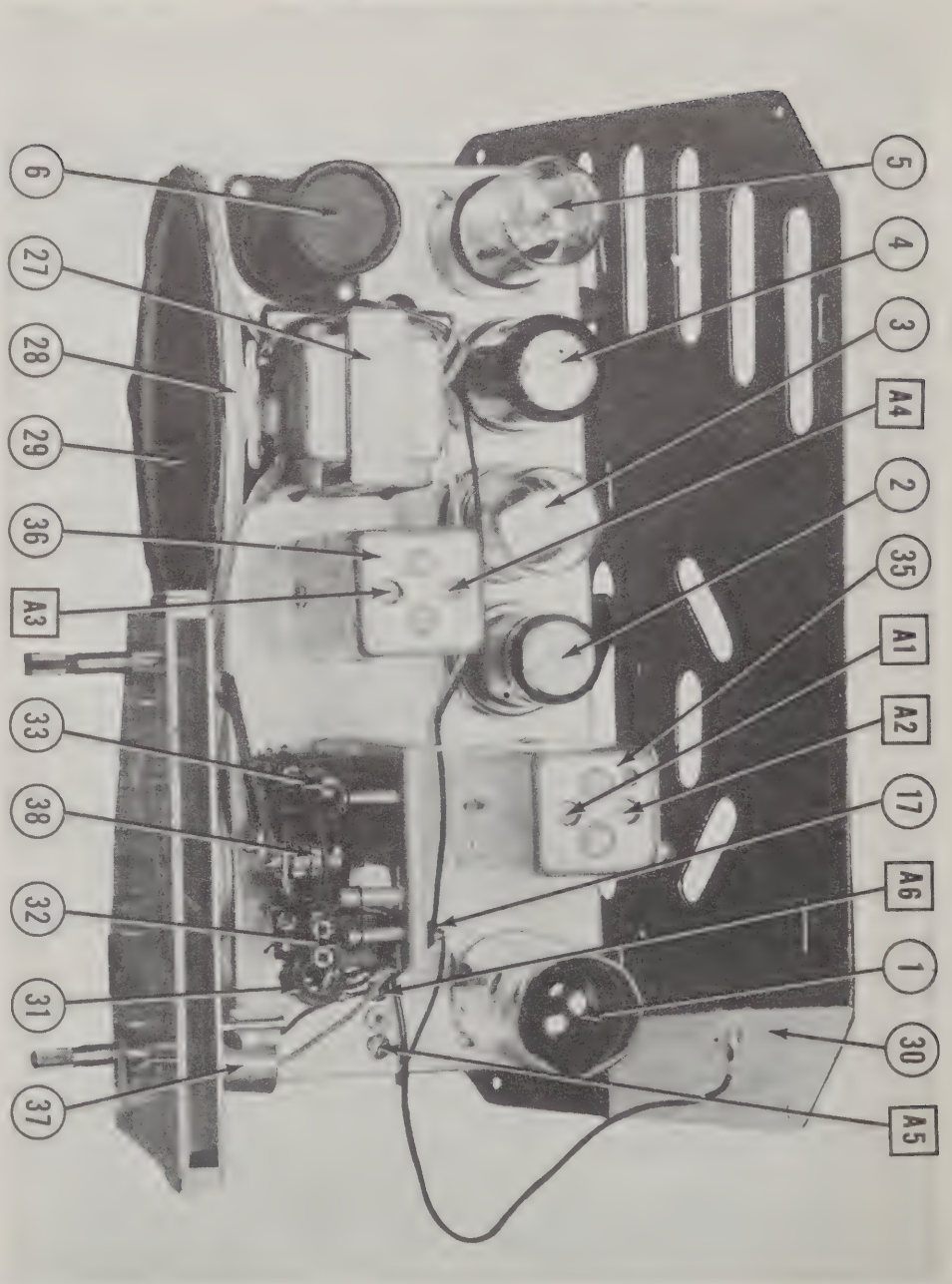
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: DETROLA PART No.	IRC PART No.	IDENTIFICATION CODES
19	22KΩ	1/3	BR17B223	BTS-22K	Red-Red-Or. Osc. Grid
20	15 Meg.	1/3	BR17B156	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
21	220KΩ	1/3	BR17B224	BTS-220K	Red-Red-Yl. Line Isolating
22	3.3 Meg.	1/3	BR17B335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
23	6.8 Meg.	1/3	BR17B685	BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Grid
24	470KΩ	1/3	BR17B474	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
25	150Ω	1/2	BW-½-150	BW-½-150	Br.-Grn.-Br. Output Cathode
26	470KΩ	1/3	BR17B474	BTS-470K	Yl.-Vi.-Yl. Output Grid

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: DETROLA PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
27	1900Ω	3.5Ω	160Ω	.5Ω		A-3076‡	T-22S45‡		‡Bend mounting tabs down, file out slots and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA DETROLA PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD RES.	VC IMP.		ST-450†		†Add 1500Ω 10 Watt Resistor in Parallel with Field Coil
28	350Ω	3.5Ω	C-51014	Mod. H5-S		
	CONE DIA.	VC DIA.				
29	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

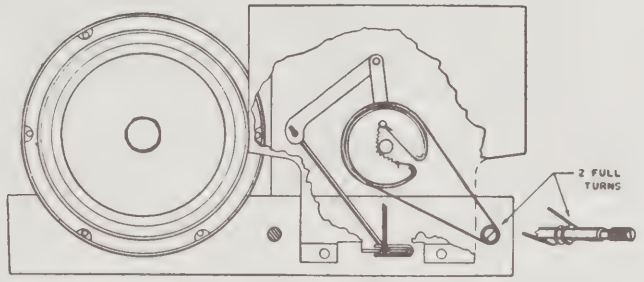
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA DETROLA PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
30	Ant. Plate					
31	Ant. Coupl.	★				★No continuity
32	Ant. Coil					Items 32, 33 ganged together and slug tuned. Items 31, 32, 33 may be obtained as complete tuner assby. Part No. D54902
33	Osc. Coil					
34	Cathode Coil	9.5Ω		B54903		
35	Input IF	29Ω	22Ω	B51010-1	16-6658	
36	Output IF	34Ω		B51011-1	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA DETROLA PART No.		INSTALLATION NOTES
37	Bayonet	6-8	.15	Brown	A-6158		Type 47

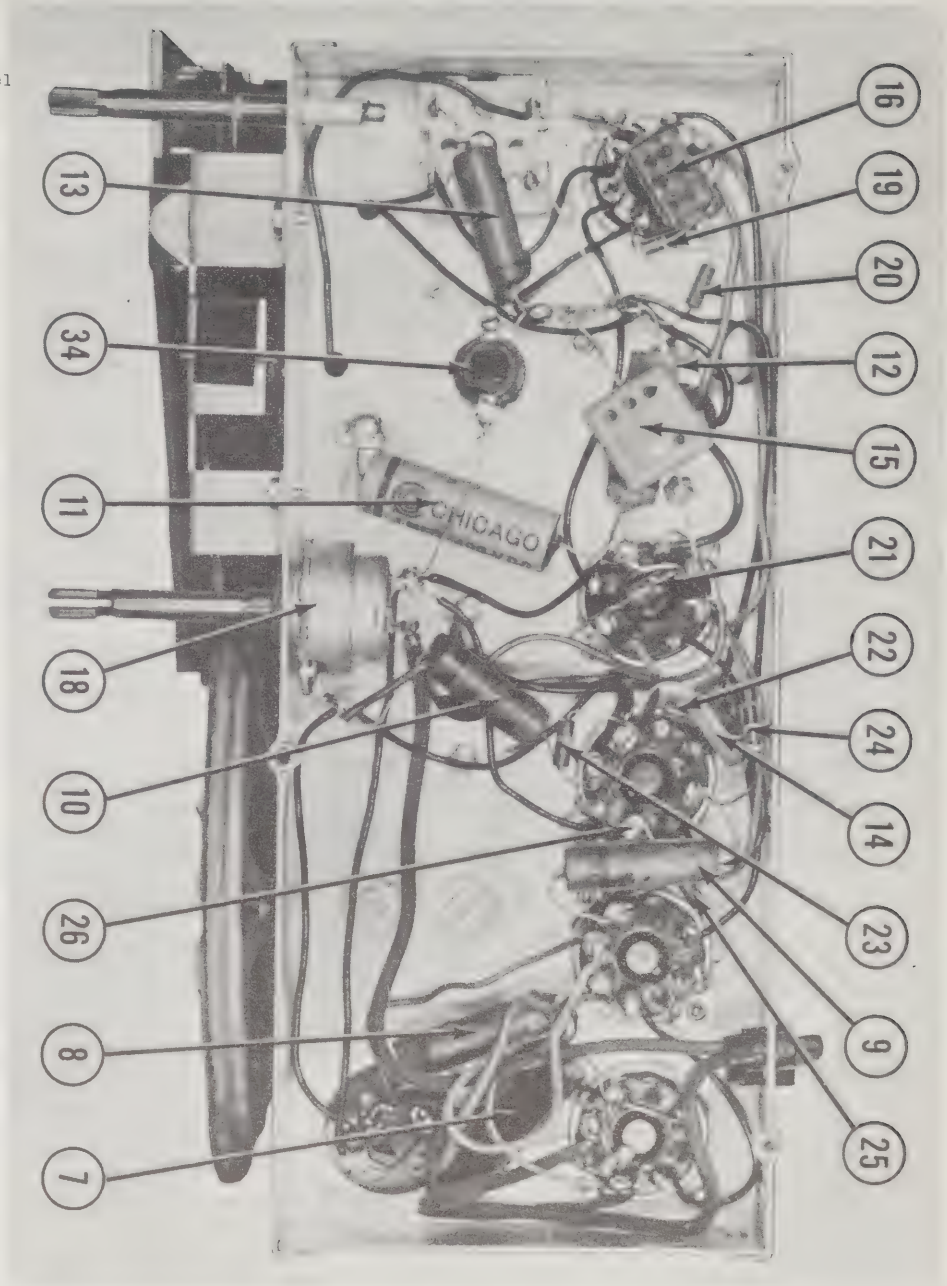
MISCELLANEOUS

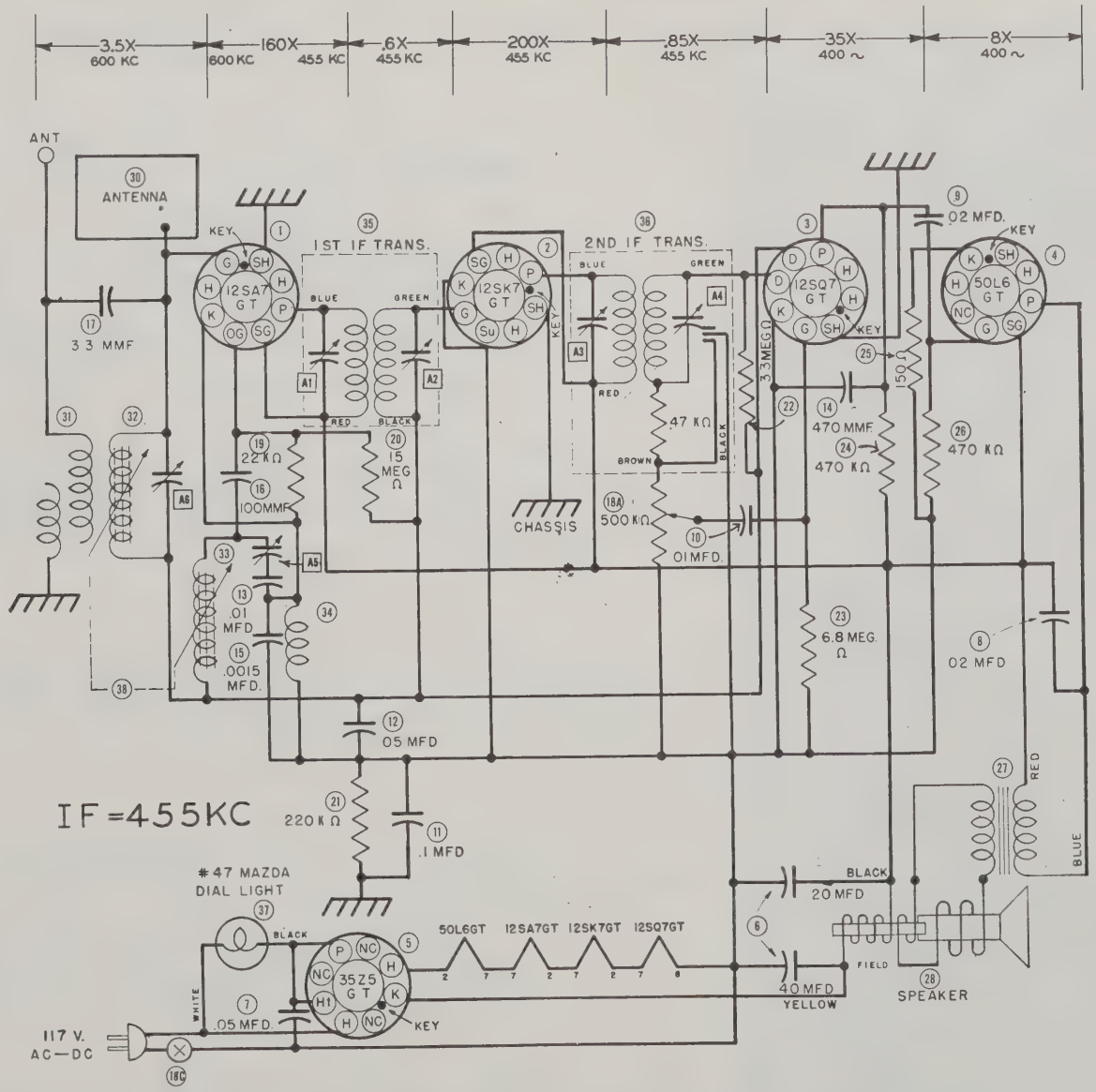
ITEM No.	PART NAME	DETROLA PART No.	NOTES
38	Tuner Assby.	D-54902	Permeability
A5	Trimmer Cap.	B-54904-1	Osc. Adj.
A6	Trimmer Cap.		Ant. Adj.



Dial Mechanism

CHASSIS—BOTTOM VIEW





Pin No	12SA7GT Volt	12SA7GT Res	12SK7 Volt	12SK7 Res
1	0V.	210KΩ	0V.	210 KΩ
2	34V.AC	35Ω	23.5V.AC	23Ω
3	97V.DC	37 KΩ	0V.	0Ω
4	97V.DC	37 KΩ	-1.4V.DC	2.3MEG.
5	-6.6V DC	19.5 KΩ	0V.	0Ω
6	.1V.DC	8.5 Ω	97V.DC	37KΩ
7	23.5V.AC	23Ω	11.5V.AC	12Ω
8	-1.4V.DC	2.3MEG.	97V.DC	37KΩ

Pin No	12SQ7GT Volt	12SQ7GT Res	50L6GT Volt	50L6GT Res
1	0V.	210 KΩ	0V.	INF.
2	-8V.DC	6.5MEG.	87V.AC	79Ω
3	0V.	0Ω	92V.DC	37KΩ
4	-.4V.DC	460KΩ	97V.DC	37KΩ
5	-1.4V.DC	2.3MEG.	0V.	390KΩ
6	55V.DC	500KΩ	0V.	INF.
7	11.5V.AC	12Ω	34V.AC	35Ω
8	0V.	0Ω	5.8V.DC	135Ω

Pin No.	35Z5GT Volt	35Z5GT Res
1	0V.	INF.
2	117V.AC	105Ω
3	113V.AC	102Ω
4	0V.	INF.
5	113V.AC	102Ω
6	0V.	INF.
7	87V.AC	79Ω
8	117V.DC	37KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-11

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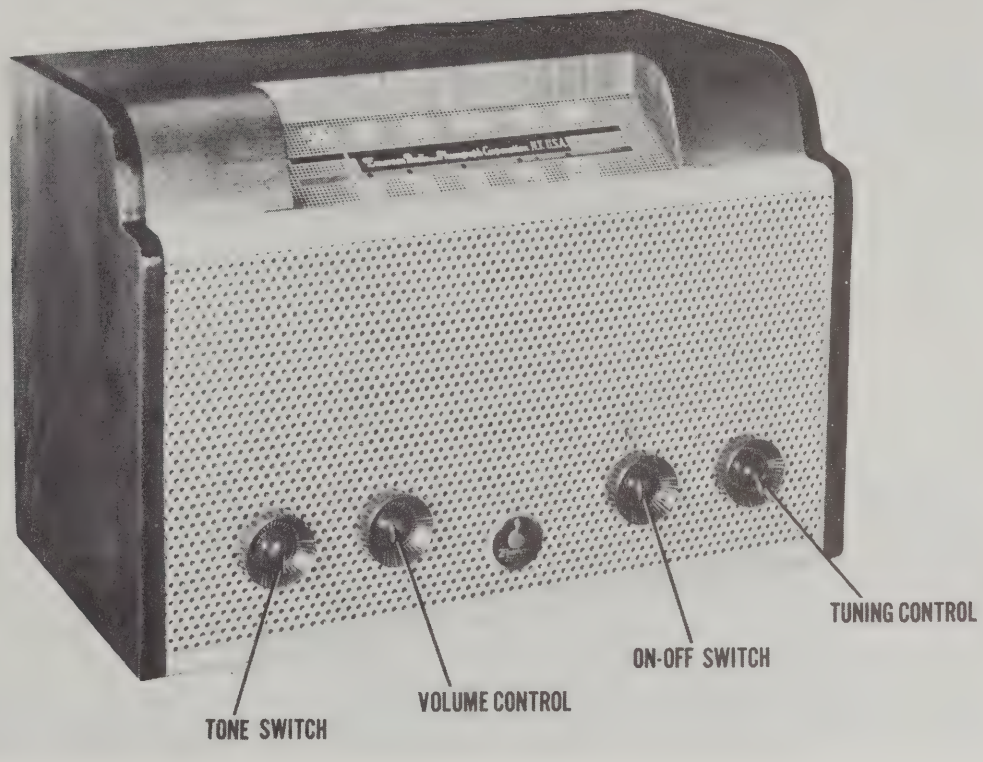
The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**



EMERSON
MODEL 512

EMERSON
MODEL 512

EMERSON MODEL 512

TRADE NAME	Emerson Model 512
MANUFACTURER	Emerson Radio & Phono. Corp.,111 8th Ave., New York, N.Y.
TYPE SET	AC - DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 6SS7 RF Amp., 12SA7 Converter, 6SS7 IF Amp., 12SQ7 Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1620KC RATING .240 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation trans. if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	High freq.end. (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
.1 MFD.	"	"	Low freq. end. (Varible fully closed)	"	A5	Adjust for minimum output.
200 MMF.	High side to ext. ant. lead. Low side to chassis.	1620KC	High freq.end. (Variable fully open)	"	A6	Adjust for maximum output.
200 MMF.	"	1400KC	Tune for maximum output.	"	A7	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA	IDENTIFICATION NOTES
1	RF Amp.	6SS7			
2	Converter	12SA7	12SA7		
3	IF Amp.	6SS7			
4	[illegible]	[illegible]	[illegible]		
5	[illegible]	[illegible]	[illegible]		
6	Rectifier	35Z5GT	35Z5GT	5	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	925110	DSB-5030-150	TA-530	PRSA150-40-40	BRD3515	2N520	Filter - Red
B	30	150							" - Green
8	.05	400		S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
9	.02	400		S-4-02	TC-12	484-02	DT4S2	TP423	50L6 Plate Bypass
10	.025	600		S-6-02	TC-1[illegible]	684-[illegible]	[illegible]	TP4[illegible]	Audio Coupling
11	.002	600		S-6-002	TC-22	684-002	DT6D2	TP405	Tone Compensation
12	.002	600		S-6-002	TC-22	684-002	DT6D2	TP405	Audio Coupling
13	.05	400		S-4-05	TC-15	484-05	DT4S5	TP426	RF Bypass Pwr. Supp.
14	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	RF Screen Bypass
15	.05	200		S-4-05	TC-1[illegible]	484-[illegible]	DT4S[illegible]	TP426	AVC Filter
16	.2	200		S-4-2	TC-[illegible]	484-[illegible]	[illegible]	TP429	Line Isolating
17	.002	600		S-6-002	TC-22	684-002	DT6D2	TP405	Ant. Coupling
18	220	500		MO.5-32	1FM-32	1468-0002	5W5T2	MC237	Audio Plate Bypass
19	110	500		MO.5-31	1FM-31	1468-[illegible]	5W5T1	MC235	IF Bypass Vol. Cont.
20	110	500		MO.5-31	1FM-31	1468-0001	5W5T1	MC235	RF Coupling
21	220	500		MO.5-32	1FM-32	1468-0002	5W5T2	MC237	" "

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	500kΩ	1	390180	UM156	D11-133	AM-58-S	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 22A per instructions

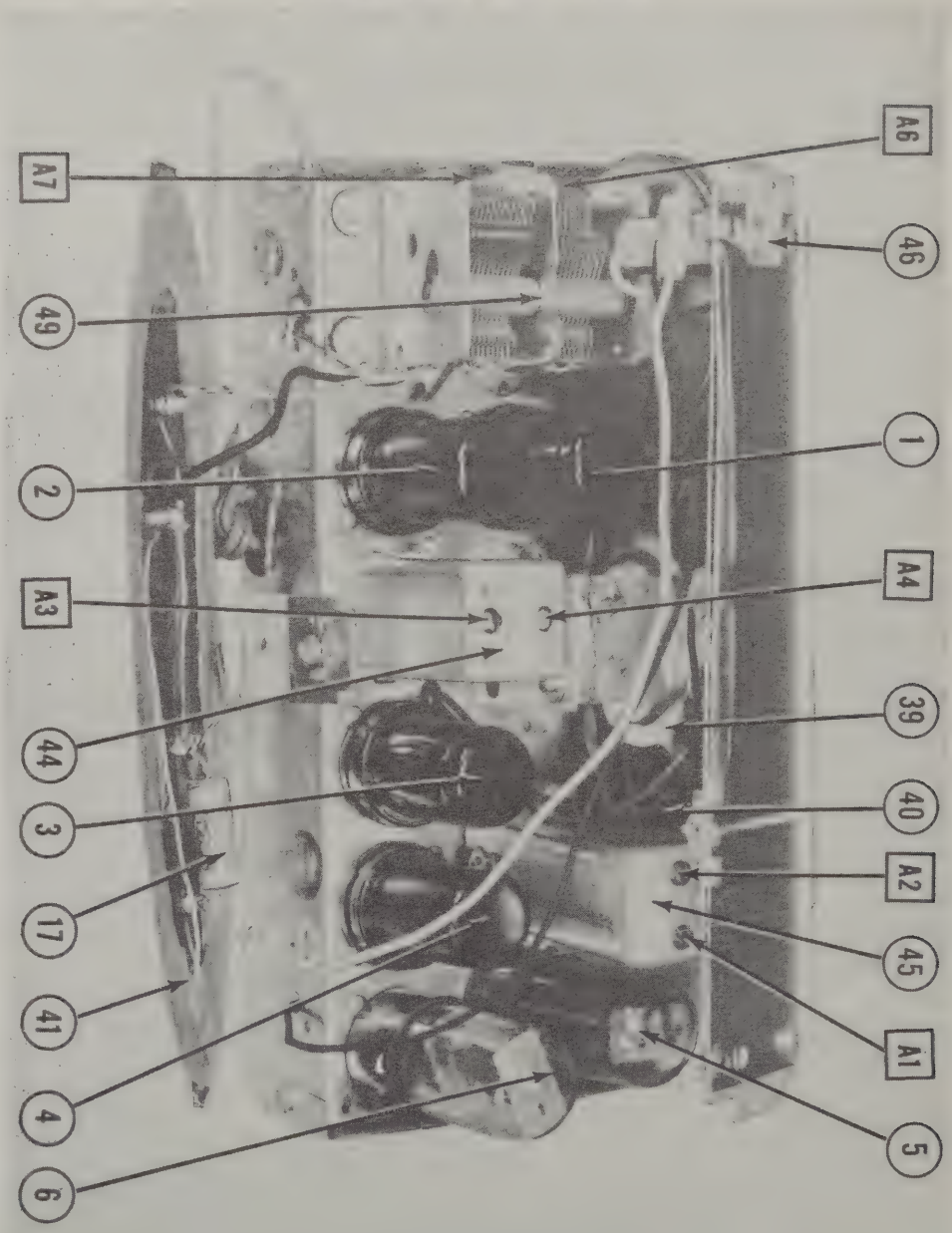
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
23	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. RF Grid
24	220KΩ	½		BTS-220K	Red-Red-Yl. Line Isolation
25	39kΩ	½		BTS-39K	Or.-White-Or. RF Screen Dropping
26	10KΩ	½		BTS-10K	Br.-Blk.-Or. RF Plate Load
27	22KΩ	½		BTS-22K	Red-Red-Or. Converter Grid
28	22KΩ	½		BTS-22K	Red-Red-Or. Osc. Grid
29	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue AVC Network
30	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
31	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
32	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
33	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Output Grid
34	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
35	1000Ω	1		BTA-1000	Br.-Blk.-Red Filter
36	15Ω	½		BW-½-15	Br.-Grn.-Blk. Rectifier Ballast
37	10Ω	½		BW-½-10	Br.-Blk.-Blk. Series Pilot Light

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
38	2400Ω	4.6Ω	230Ω	.8Ω	734080	A-3876	T-22S45		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA EMERSON PART No.	JENSEN PART No.		INSTALLATION NOTES
3	FIELD PM	VC IMP. 4.5Ω	180008			
4	CONE DIA. 4"x6"	VC DIA. ½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

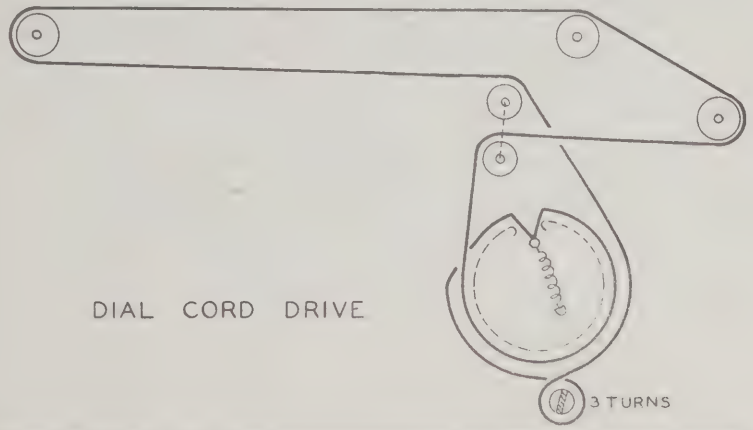
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
41	Loop Ant.	0Ω	1.5Ω	700010		
42	Wave Trap	67Ω		708000		
43	Osc. Coil	1Ω	6.5Ω	716070	14-1040*	*Add 50 MMF. cap. from osc. grid to high side tuning cap.
44	Input IF	35Ω	23Ω	720380	16-6666	
45	Output IF	28Ω		720390	16-6670†	†Drill new mounting holes.

DIAL LIGHT

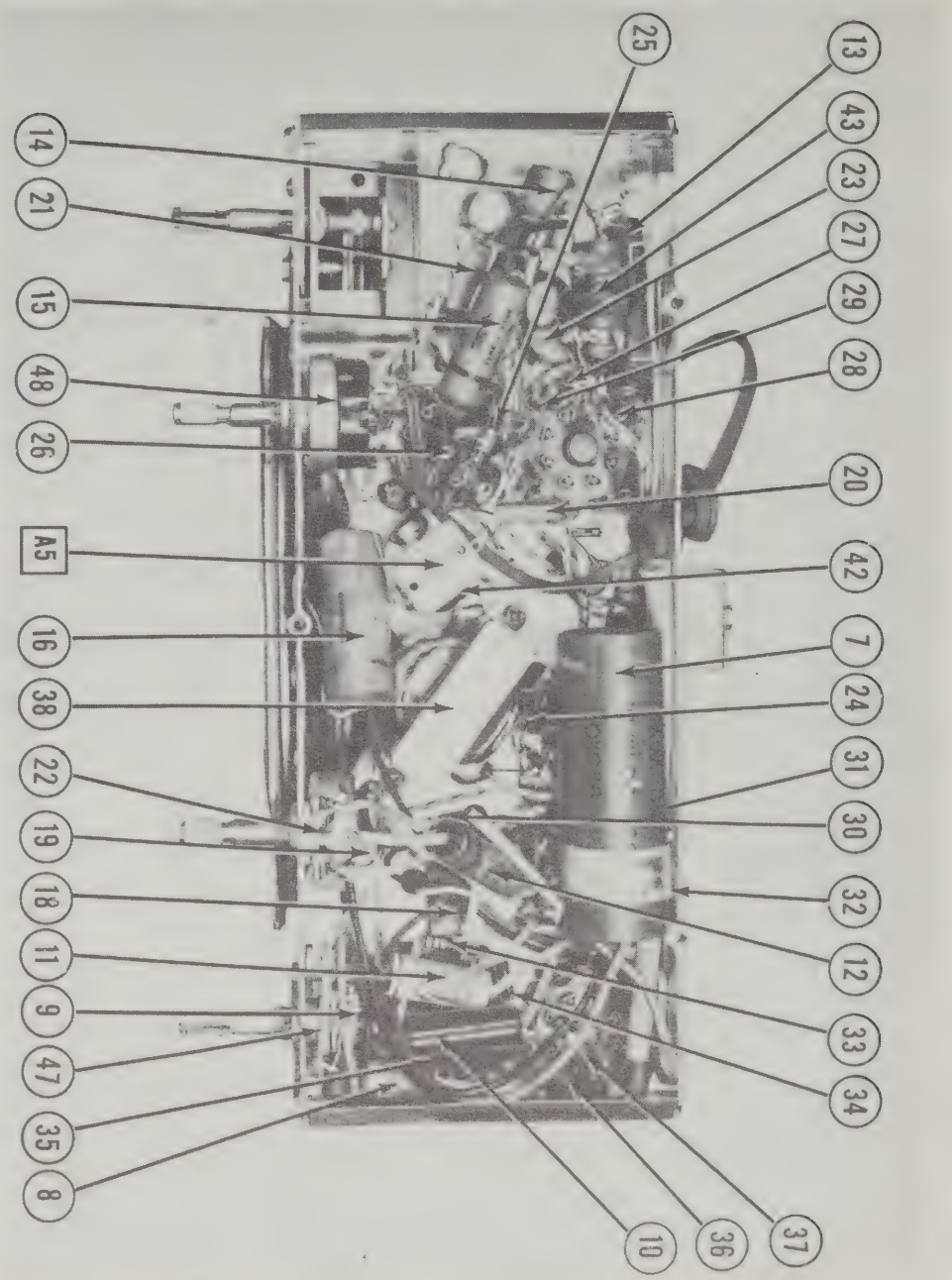
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA EMERSON PART No.		INSTALLATION NOTES
46	Bayonet	6-8	0.1b	Brown			Type 47

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
47	Tone-Switch		
48	On-Off Switch		
49	Tuning Cap.		2 Gang Variable Cap.

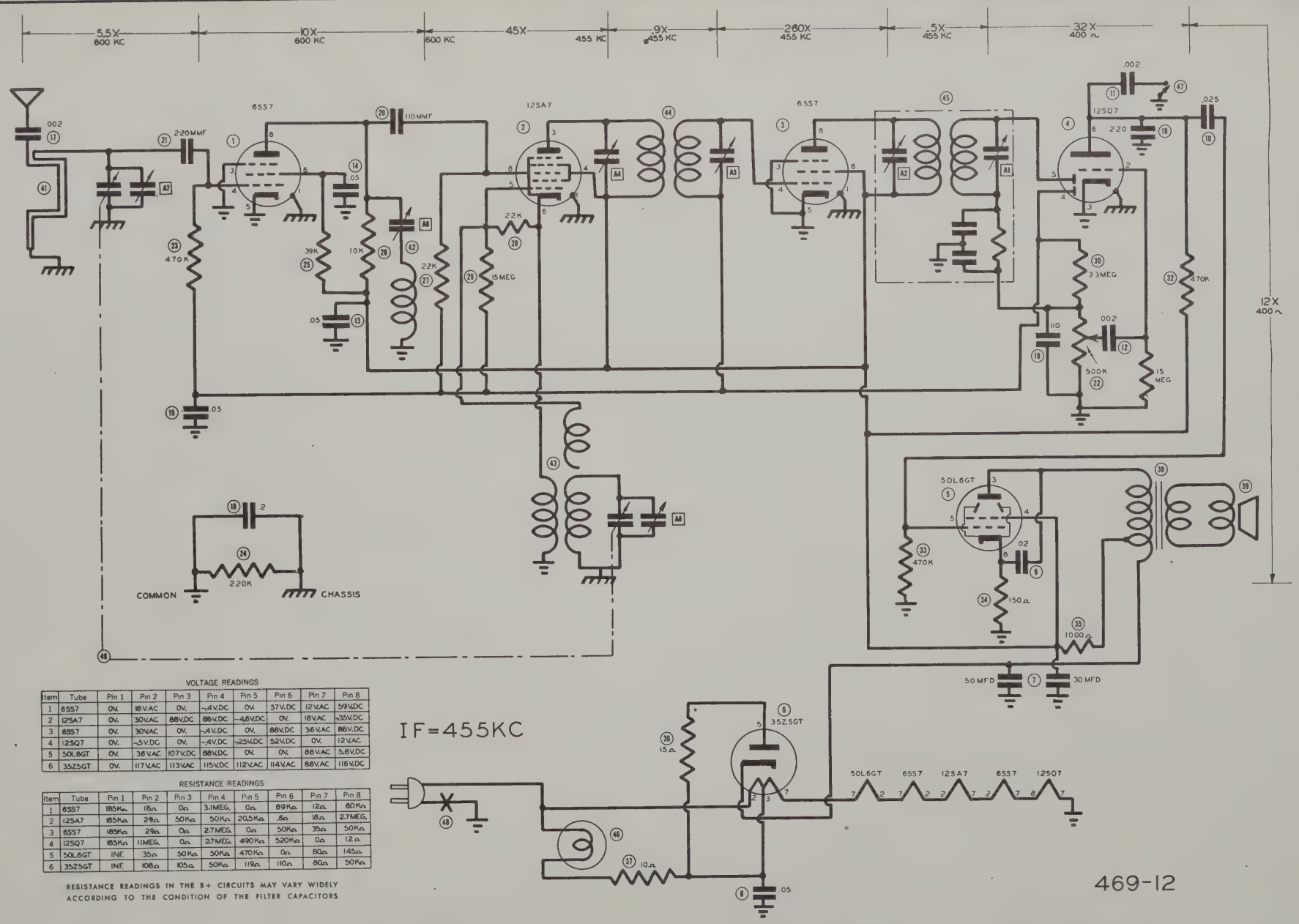


CHASSIS—BOTTOM VIEW



EMERSON MODEL 512

EMERSON MODEL 512



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SS7	0V.	18V.AC	0V.	-.4V.DC	0V.	57V.DC	12V.AC	59V.DC
2	12SA7	0V.	30V.AC	88V.DC	88V.DC	-4.6V.DC	0V.	18V.AC	+35V.DC
3	6SS7	0V.	30V.AC	0V.	-.4V.DC	0V.	88V.DC	36V.AC	86V.DC
4	12SQ7	0V.	-5V.DC	0V.	-.4V.DC	-25V.DC	52V.DC	0V.	12V.AC
5	50L6GT	0V.	36V.AC	107V.DC	88V.DC	0V.	0V.	88V.AC	5.6V.DC
6	35Z5GT	0V.	117V.AC	113V.AC	115V.DC	112V.AC	114V.AC	88V.AC	116V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SS7	185KΩ	18Ω	0Ω	3.1MEG.	0Ω	89KΩ	12Ω	60KΩ
2	12SA7	185KΩ	29Ω	50KΩ	50KΩ	20.5KΩ	.6Ω	18Ω	2.7MEG.
3	6SS7	185KΩ	29Ω	0Ω	2.7MEG.	0Ω	50KΩ	35Ω	50KΩ
4	12SQ7	185KΩ	11MEG.	0Ω	2.7MEG.	490KΩ	520KΩ	0Ω	12Ω
5	50L6GT	INF.	35Ω	50KΩ	50KΩ	470KΩ	0Ω	80Ω	145Ω
6	35Z5GT	INF.	108Ω	105Ω	50KΩ	119Ω	110Ω	80Ω	50KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-12

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

EMERSON
MODEL 539

EMERSON
MODEL 539

EMERSON MODEL 539

TRADE NAME	Emerson Model 539
MANUFACTURER	Emerson Radio & Phono. Corp., 111 8th Ave., New York, N.Y.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12SA7 or 12BE6 Converter, 12SK7 or 12BA6 IF Amp., 12SQ7 or 12AT6, Det.-AVC-AF, 50L6GT or 50B5 Power Output, 35Z5GT or 35W4 Rectifier - (Tube Types are not interchangeable)
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1620KC RATING .240 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at horizontal position. Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD	High side to stator of rear section of variable. Low side to B-.	455KC	High freq. end (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
	Loop	1425KC	1425KC	"	A5	Connect output of signal generator to loop of a few turns of wire and radiate signal into receiver loop. Space at least 15 inches. Adjust for maximum output.
	"	1425KC	Tune for maximum output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7 or 12BE6	12SA7 12BE6	8R 7CH	
2	IF Amp.	12SK7 or 12BA6	12SK7 12BA6	8N 7BK1	
3	Det.-AVC-AF	12SQ7 or 12AT6	12SQ7 12AT6	8Q 7BT	
4	Power Output	50L6GT or 50B5	50L6GT 50B5	7AC 7BZ	or 50A5 (Not interchangeable)
5	Rectifier	35Z5GT or 35W4	35Z5GT 35W4	6AD 5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	30	150		DSB-5030-150	TA-530	PRSA150-40-40	BRD3515	2N520	Filter - Red
B	50	150							" - Green
7	.2	200		S-4-2	TC-2	484-.2	DT4P2	TP429	Line Isolation
8	.05	400		S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
9	.02	400		S-4-02	TC-12	484-02	DT4S2	TP423	50L6 Plate Bypass
10	.02	600		S-6-02	TC-12	684-02	DT6S2	TP412	Audio Coupling
11	.001	600		S-6-001	TC-21	684-001	DT6D1	TP404	Audio Plate Bypass
12	.002	600		S-6-002	TC-22	684-002	DT6D2	TP405	Audio Coupling
13	.1	200		S-4-1	TC-1	484-.1	DT4P1	TP428	AVC Filter
14	220	500		MO.5-32	1FM-32	1468-0002	5W5T2	MC237	IF Bypass Vol. Cont.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
15A	500KΩ	1	390010-134	UM156	D11-133	AM-58-S	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 15A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

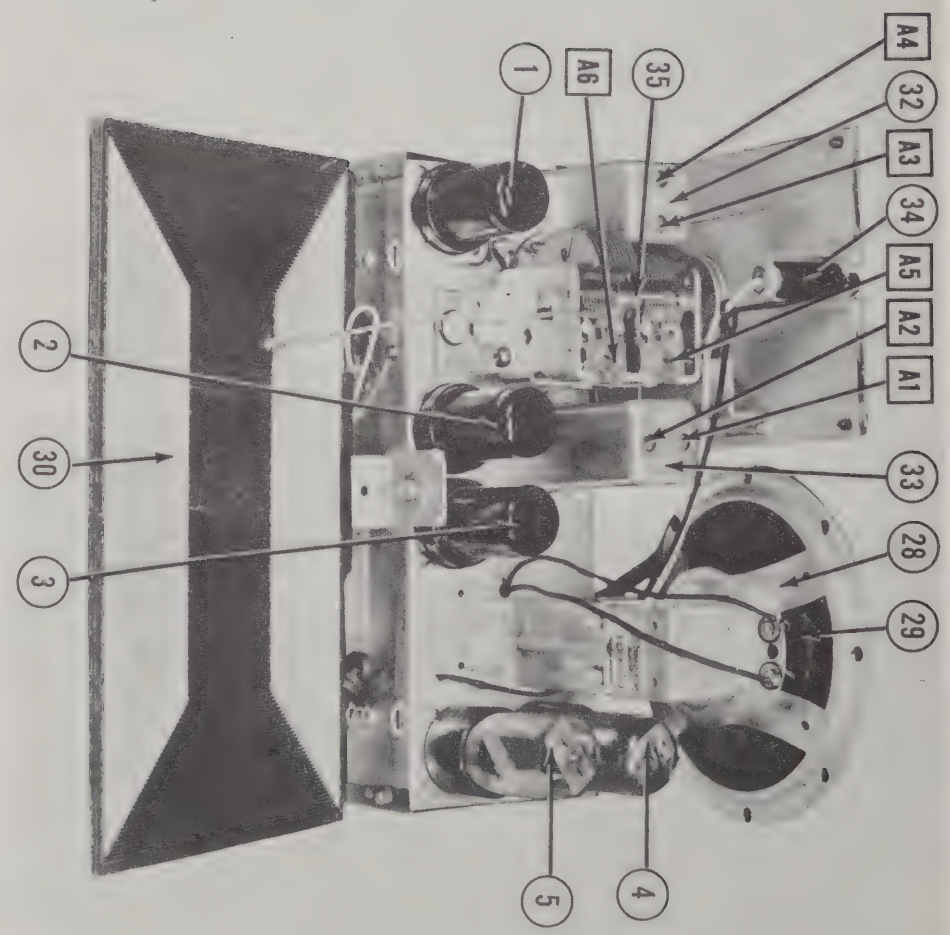
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES
16	20 Meg.	½		BTS-18 Meg.	Red-Blk.-Blue AVC Network
17	22KΩ	½		BTS-22K	Red-Red-Or. Osc. Grid
18	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
19	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Grn. 1st AF Grid
20	470KΩ	½		BTS-470K	Yel.-Vi.-Yel. 1st AF Plate Load
21	470KΩ	½		BTS-470K	Yel.-Vi.-Yel. Output Grid
22	150Ω	½		BW-½-150	Br.-Grn.-Blk. Output Cathode
23	1000Ω	1		BTA-1000	Br.-Blk.-Red Filter
24	220KΩ	½		BTS-220K	Red-Red-Yel. Line Isolating
25	15Ω	1		BW-1-15	Br.-Grn.-Blk. Rectifier Ballast
26	10Ω	½		BW-½-10	Br.-Br.-Blk. Pilot Light Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
27	2010Ω	3.2Ω	215Ω tapped @ 8Ω	.85Ω	734000	A-3876*			*Requires one new mounting hole. Add additional filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA EMERSON PART No.	JENSEN PART No.		INSTALLATION NOTES
28	FIELD PM	VC IMP. 3.2Ω	180000	ST-105 Mod. P5-V		#New mounting bracket must be fabricated.
29	CONE DIA. 4-5/8"	VC DIA. 1/2"	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT			

R F COILS

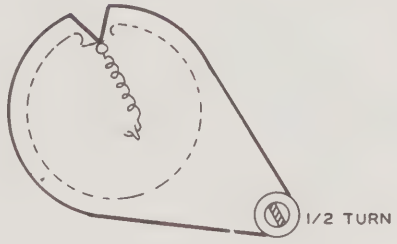
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
30	Loop Ant.		2.5Ω	700210		
31	Osc. Coil	.5Ω	5.5Ω	716010		
32	Input IF	28Ω	18Ω	720000	16-6558†	†Drill new mounting holes.
33	Output IF	23Ω	22Ω	720100	16-6660†	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA EMERSON PART No.		INSTALLATION NOTES
34	Bayonet	6-8	0.15	Brown			Type 47

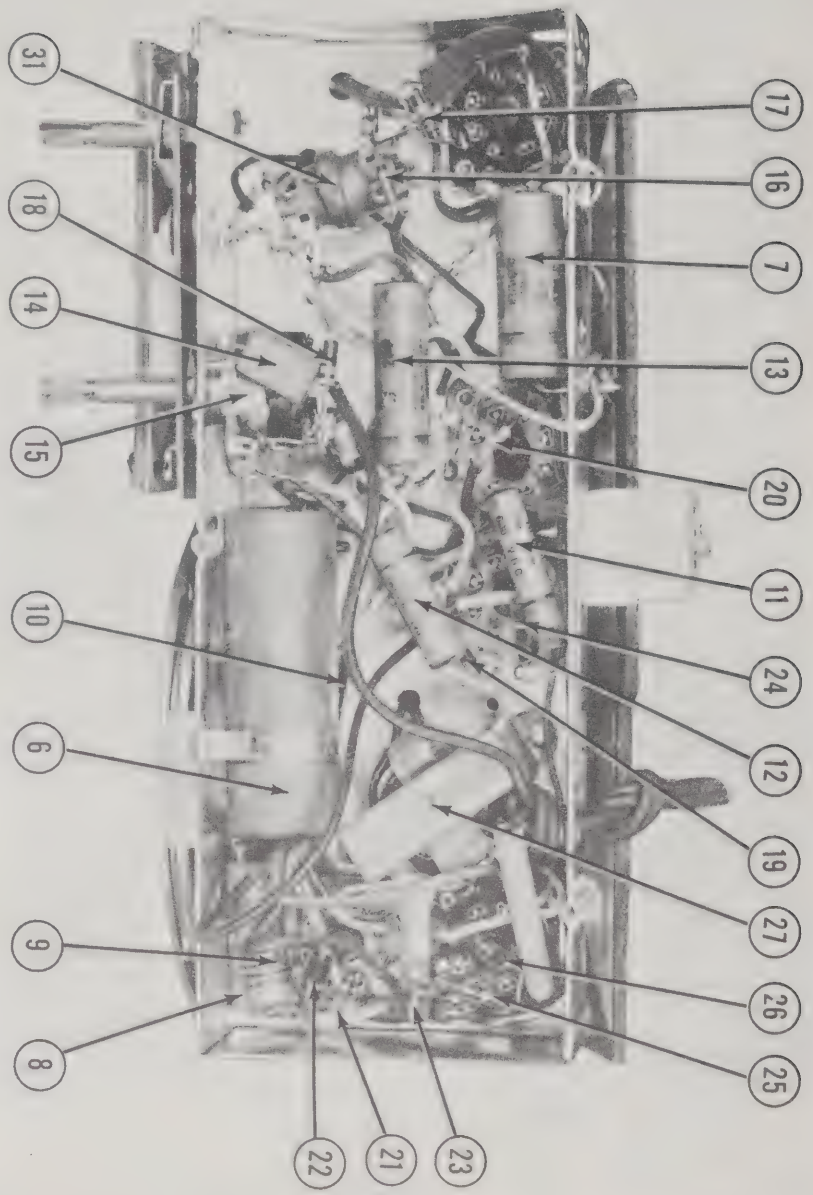
MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
35	Tuning Cap.		2 Gang Variable Cap.

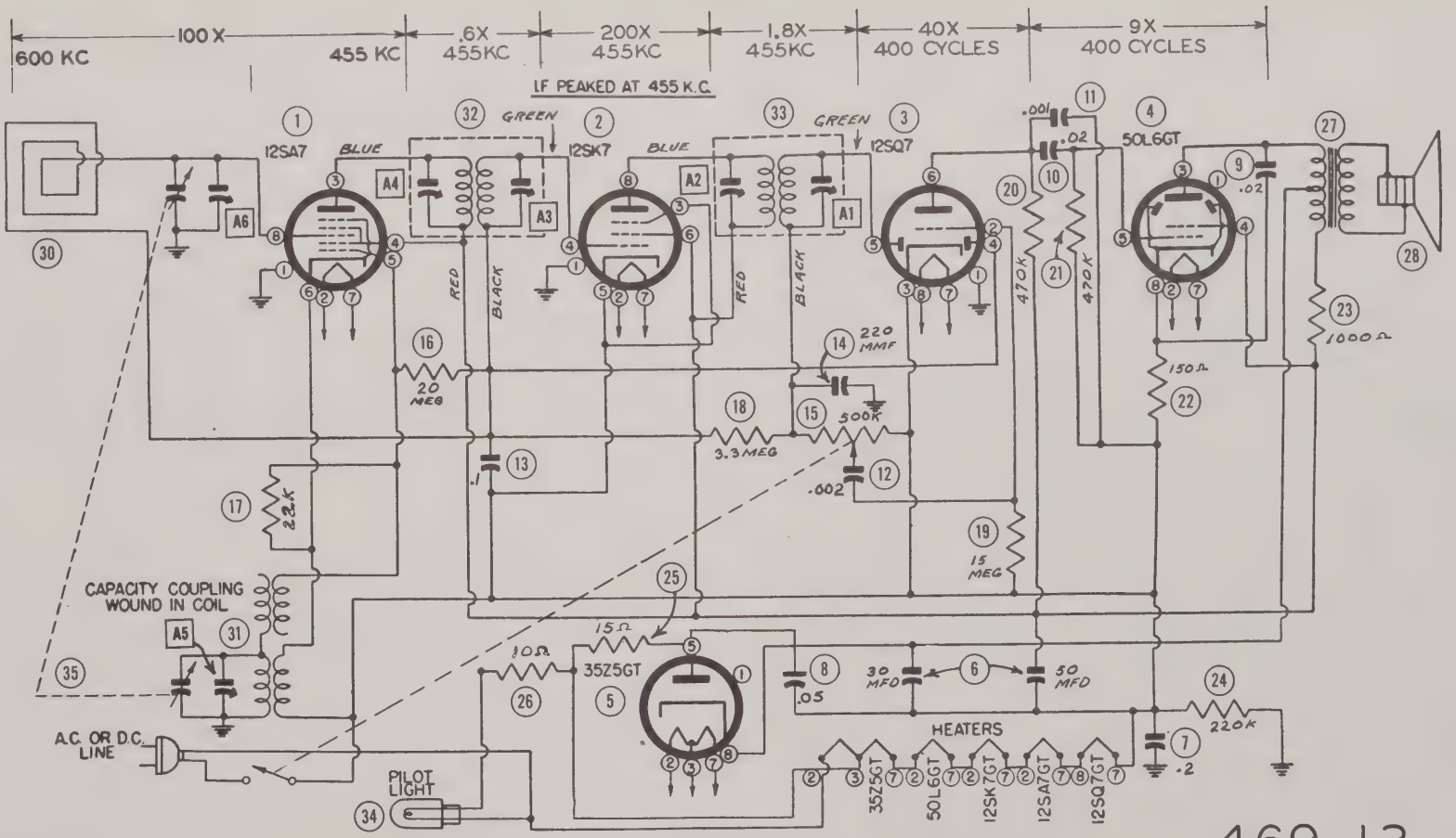


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



EMERSON MODEL 539



469-13

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V.	24V.AC	89V.DC	89V.DC	-4.4V.DC	0V.	12V.AC	-.5V.DC
2	12SK7	0V.	36V.AC	0V.	-.5V.DC	0V.	89V.DC	24V.AC	89V.DC
3	12SQ7	0V.	-.55V.DC	0V.	-.5V.DC	-.4V.DC	57V.DC	0V.	12V.AC
4	50L6GT	0V.	87V.AC	108V.DC	89V.DC	0V.	0V.	36V.AC	5.6V.DC
5	35Z5GT	0V.	117V.AC	112V.AC	114V.DC	111V.AC	113V.AC	87V.AC	114V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	180KΩ	23Ω	25KΩ	25KΩ	20.5KΩ	.7Ω	12Ω	29MEG.
2	12SK7	180 KΩ	35Ω	0Ω	2.9 MEG.	0Ω	25KΩ	23Ω	25KΩ
3	12SQ7	180 KΩ	15 MEG.	0Ω	2.9 MEG.	470KΩ	495KΩ	0Ω	12Ω
4	50L6GT	INF.	80Ω	25KΩ	25KΩ	420KΩ	0Ω	35Ω	130Ω
5	35Z5GT	INF.	105Ω	102Ω	25KΩ	115Ω	108Ω	80Ω	25KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

ESPEY
MODEL 651

ESPEY
MODEL 651

ESPEY MODEL 651

TRADE NAME	Espey Models 651, 652, 653, 6511, 6516
MANUFACTURER	Espey Mfg. Co., Inc., 528 E. 72nd St., New York 21, N.Y.
TYPE SET	AC - DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 14Q7 Converter, 14A7/12B7, 14B6 Det.-AVC-AF, 50A5 Power Output, 35Y4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	540-1700KC RATING .235 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	Quiet point at high freq. end. of dial.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
100 MMF.	High side to ant. lead. Low side to chassis.	1720KC	High freq. end. (Fully clockwise)	"	A5	" " " "
100 MMF.	High side to ant. lead. Low side to chassis.	1500KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS (Continued)

TUBES

ITEM No.	USE	REPLACEMENT DATA ESPEY PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	14Q7	14Q7	5AL	
2	IF Amp.	14A7/12B7	14A7/12B7	8V	
3	Det.-AVC-AF	14B6	14B6	8W	
4	Power Output	50A5	50A5	6AA	
5	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ESPEY PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	A-25.019	M-2x40-150	TA-440	PRSA150-40-40	BRD4415	2N511	Filter - Red
B	40	150							" - "
7	.05	400		S-4-05	TC-15	484-05	DT4S5	TP428	Line Filter
8	.02	400		S-4-02	TC-12	484-02	DT4S2	TP423	50A5 Plate Bypass
9	.02	400		S-4-02	TC-12	484-02	DT4S2	TP423	Audio Coupling
10	.005	600		S-6-005	TC-25	684-005	DT6D5	TP408	" "
11	.005	600		S-6-005	TC-25	684-005	DT6D5	TP408	AVC Filter
12	.25	200		S-4-25	TC-2	484-.25	DT4P25	TP430	Line Isolation
13	.002	600		S-6-002	TC-22	684-002	DT6D2	TP405	Ant. Coupling
14	250	500		MO.5-325	1FM-325	1468-00025	5W5T25	MC240	Audio Plate Bypass
15	250	500		MO.5-325	1FM-325	1468-00025	5W5T25	MC240	IF Bypass Vol. Cont.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ESPEY PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	500KΩ	1	A-9.066	MR46	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

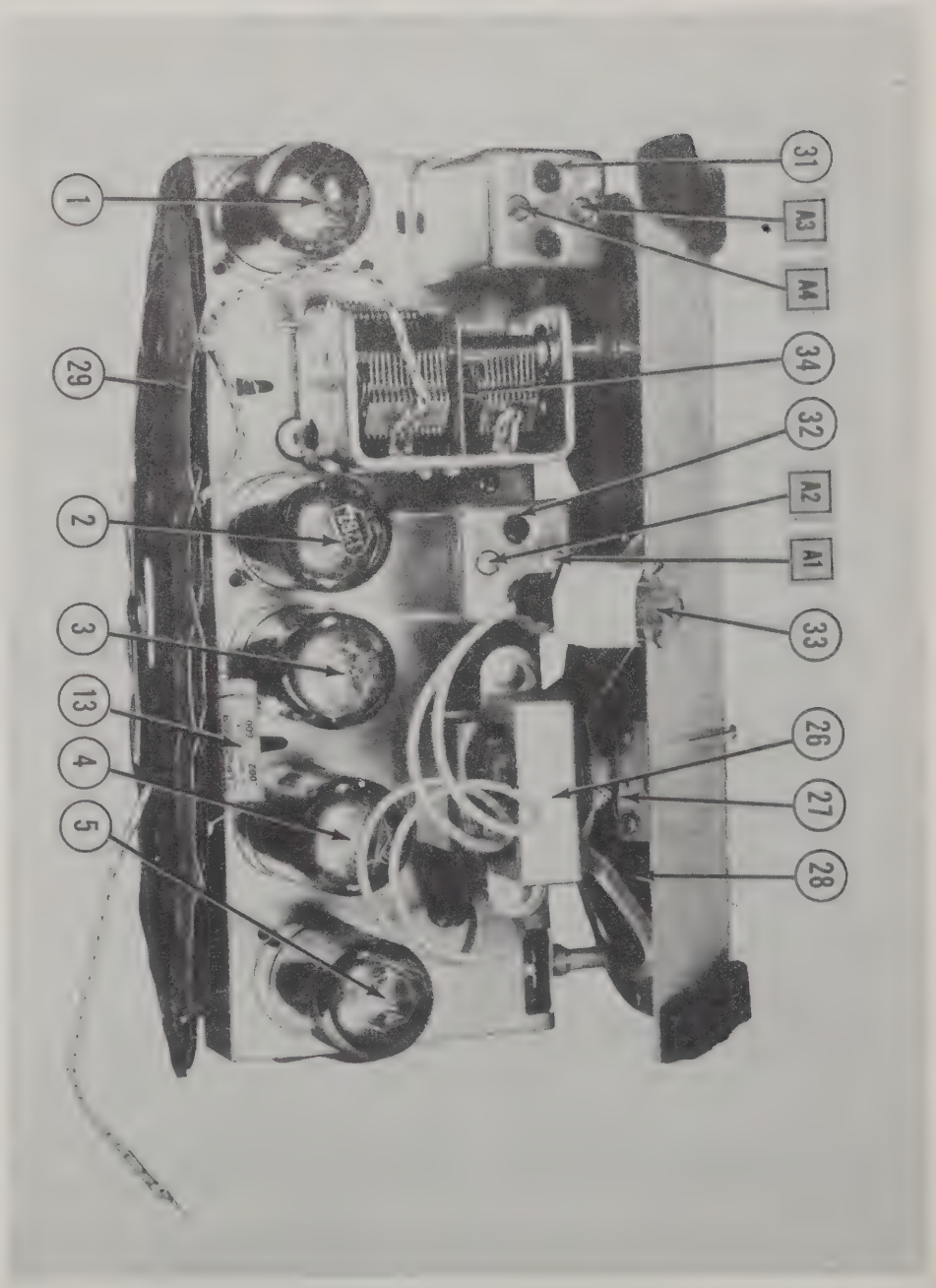
RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ESPEY PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
17	22KΩ	¼		BTS-22K	Red-Red-Or. Oscillator Grid
18	10 Meg.	¼		BTS-10 Meg.	Br.-blk.-blue AVC Network
19	3.3 Meg.	¼		BTS-3.3 Meg.	Or.-Or.-Grn. " "
20	10 Meg.	¼		BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
21	470KΩ	¼		BTS-470K	Yl.-Vi.-Yl. " " Plate Load
22	470KΩ	¼		BTS-470K	Yl.-Vi.-Yl. Output Grid
23	150Ω	½		BW-½-150	Br.-Grn.-Br. " Cathode
24	220KΩ	¼		BTS-220K	Red-Red-Yl. Line Isolation
25	1000Ω	1		BTA-1000	Br.-blk.-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA ESPEY PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
26	17[illegible]	3.3Ω	155Ω	.5Ω	Part of B-11.037	A-3676	T-22S45		

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA ESPEY PART No.	REPLACEMENT DATA JENSEN PART No.	INSTALLATION NOTES
17	FIELD	VC IMP.	B-11.037	ST-10e Mod.P5-X	
	PM	3.3Ω			
18	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT		
	4-5/8"	9/16"			

R F COILS

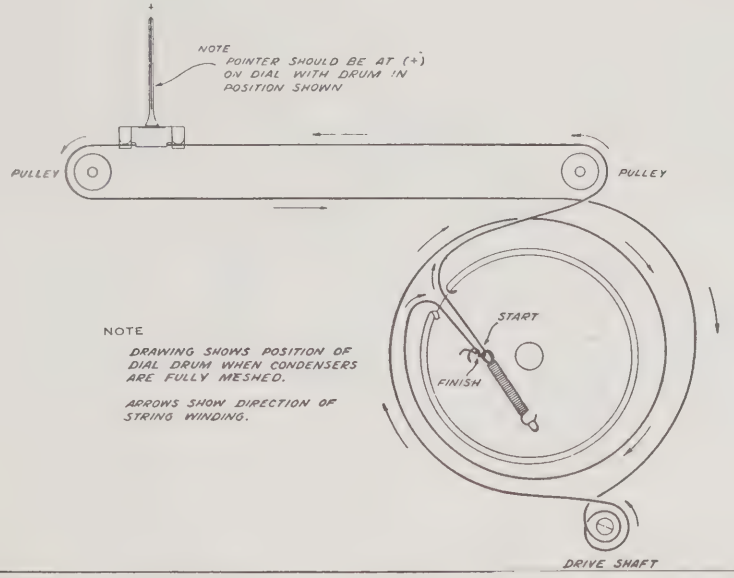
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ESPEY PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
29	Loop Ant.	0Ω	1.3Ω	B5.006		
30	Osc. Coil	.8Ω	6.2Ω	B2.192	14-1040 *	* Add 50 MMFD Cap. from grid to high side tuning Cap.
31	Input IF	21.5Ω	21Ω	C2.191-1	16-6666	
32	Output IF	14.3Ω	14.5Ω	C2.191-2	16-6667	

DIAL LIGHT

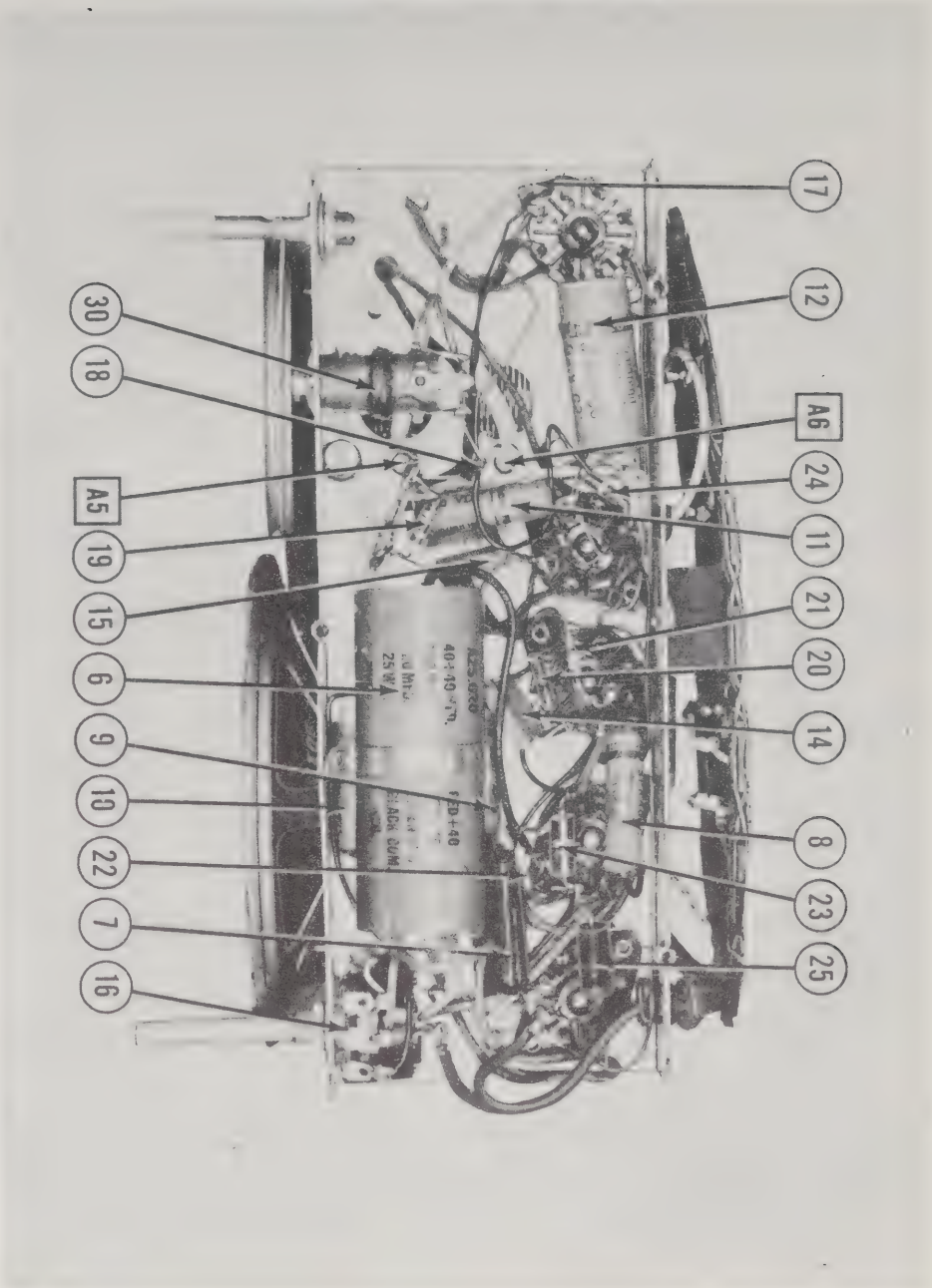
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ESPEY PART No.		INSTALLATION NOTES
33	Bayonet	6-8	0.15	Brown			Type 47

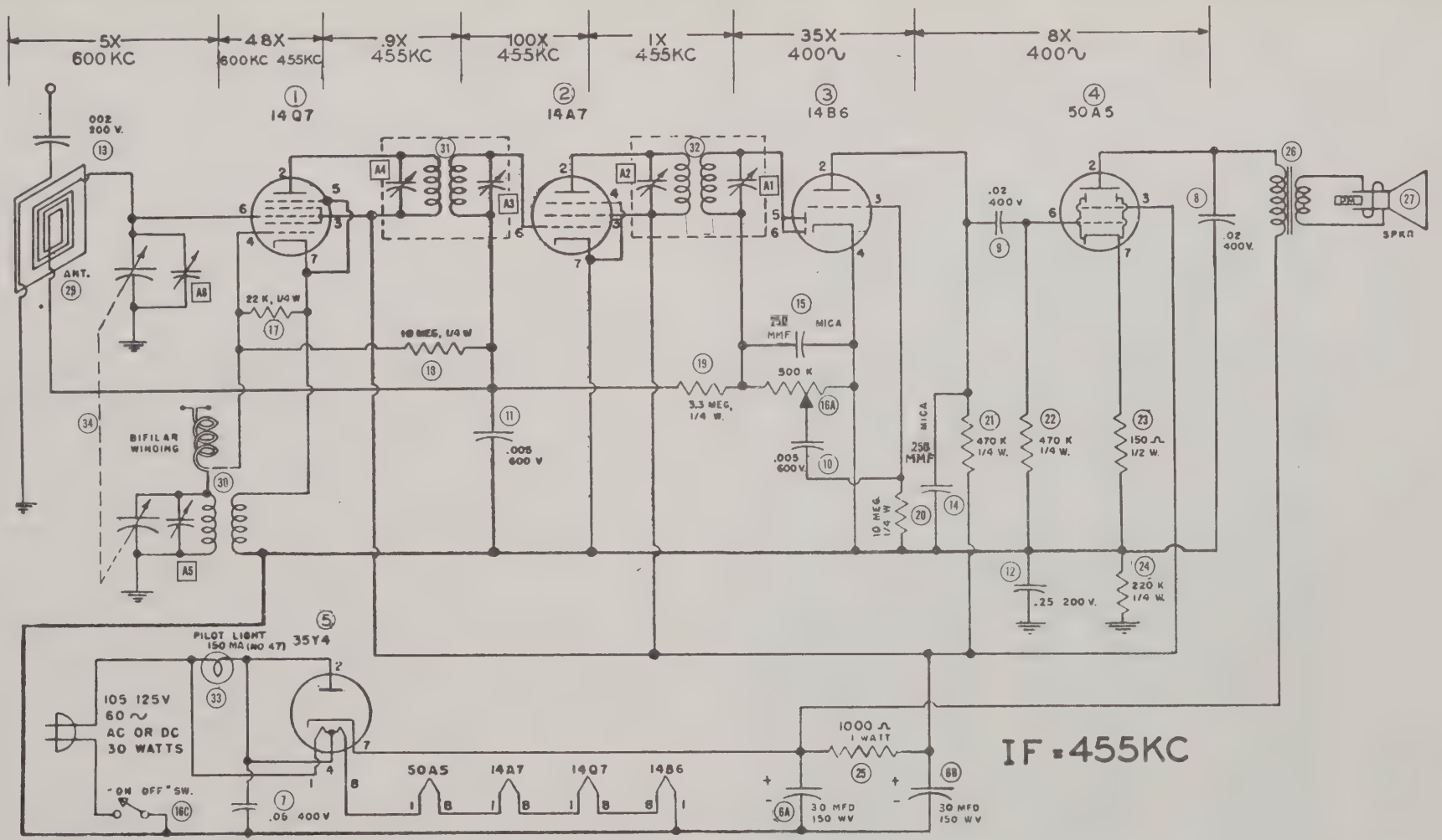
MISCELLANEOUS

ITEM No.	PART NAME	ESPEY PART No.	NOTES
34	Tuning Cap.	C6.032	2 Gang Variable Cap.



CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	25.5V.AC	93V. DC	93V. DC	-4.8V.DC	0V.	-.15V. DC	0V.	13V.AC
2	14A7	38V.AC	93V. DC	93V. DC	0V.	0V.	-.15V. DC	0V.	25.5VAC
3	14B6	0V.	60V. DC	-.45V.DC	0V.	-.7 V.DC	-.7V.DC	0V.	13V.AC
4	50A5	87V.AC	107V.DC	93V.DC	0V.	0V.	0V.	5.8V.DC	38V.AC
5	35Y4	117V.AC	113V.AC	0V.	113V.AC	103V.DC	0V.	113V.DC	87VAC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

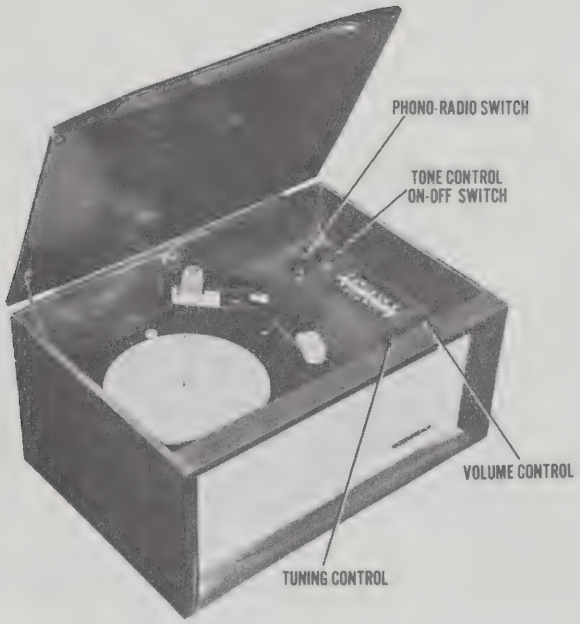
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	24.5Ω	231 KΩ	231KΩ	19.8KΩ	.5Ω	2.7MEG	.5Ω	12.5Ω
2	14A7	39Ω	231 KΩ	231 KΩ	0Ω	222KΩ	2.7MEG	0Ω	24.5Ω
3	14B6	0Ω	700KΩ	1.2MEG	0Ω	470KΩ	470KΩ	1 NF	12.5Ω
4	50A5	87Ω	230KΩ	231KΩ	0Ω	0Ω	450KΩ	130Ω	39Ω
5	35Y4	112Ω	110Ω	1 NF	110Ω	230K	1 NF	230KΩ	87Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-14

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



GILFILLAN MODEL 66PM

TRADE NAME	Gilfillan Models 66P, 66PM "The El Dorado"
MANUFACTURER	Gilfillan Bros. Inc., 1815-1849 Venice Blvd., Los Angeles 6, California
TYPE SET	AC Operated Combination Auto. Phono. - Superheterodyne Receiver with Self Contained Loop Antenna (Model 66P has Auto. Tuning)
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SK7 IF Amp., 6SQ7 Det.-AVC-AF, 6V6GT/G Power Output, 6X5GT Rectifier.
POWER SUPPLY	117 Volts AC
TUNING RANGE—BROADCAST	540-1700KC RATING .440 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at the last reference mark at the low freq. end of the dial. Connect jumper on antenna binding post for outside antenna operation.

If available, connect vacuum tube voltmeter to AVC line for an output indicator. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. If vacuum tube voltmeter is used on AVC line do not exceed 1 volt. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
100 MMF.	High side to Ant. terminal. Low side to chassis.	455KC	Low freq. end.	Across voice coil.	A1,A2, A3,A4.	Adjust for maximum output.
100 MMF.	"	"	"	"	A5	Adjust for minimum output.
100 MMF.	"	1500KC	1500KC		A3,A7 A8	Adjust for maximum output in order given.
100 MMF.	"	600KC	Tune for maximum output.	"	A9.	Rock variable and adjust for maximum output. Recheck A3, A7 and A8 at 1500KC.
	Loop	1500KC	Tune for maximum output.	"	A10	Change antenna jumper for loop operation. Connect output of signal generator to a few turns of wire and radiate signal into receiver loop. Adjust for maximum output. (This adjustment may not used on some models)

DISASSEMBLY INSTRUCTIONS

1. Remove the four set screw type control knobs and felt washers.
2. Disconnect phono-motor, pick-up and speaker plugs from chassis.
3. Remove nut on top of IF can holding black ground wire bonding the phono. and the radio.
4. Remove the three machine screws and washers holding radio chassis to cabinet. Remove chassis and wood spacer.
5. Remove the three long machine screws and washers holding loop antenna to cabinet. Remove loop antenna.
6. Remove four nuts and lock washers from speaker posts. Remove speaker.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.	6SK7	6SK7	8N	
4	Det.-AVC-AF	6SQ7	6SQ7	8Q	
5	Power Output	6V6GT1G	6V6GT1G	7AC	
6	Rectifier	6X5GT	6X5GT	3S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GILFILLAN PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	450		DY-312	EL-350	AF44J4A	UF6BJ38	FP339	▲ Filter
B	20	450					BR202A		▲ "
C	20	25							Cath. Bypass
8	.1	400		S-4-1	TC-1	4G4-.1	DT4P1	TP428	RF Bypass Pwr. Supp.
9	.005	600		S-6-005	TC-25	6G4-005	DT6D5	TP408	Output Plate Bypass
10	.006	600		S-6-006	TC-26	6G4-006	DT6D6	TP409	Tone Compensation
11	.02	400		S-4-02	TC-12	4G4-02	DT4S2	TP423	Audio Coupling
12	.25	400		S-4-25	TC-2	4G4-.25	DT4P25	TP430	Audio Plate Decoup.
13	.01	400		S-4-01	TC-11	4G4-01	D14S1	TP421	Tone Compensation
14	.002	600		S-6-002	TC-22	6G4-002	DT6D2	TP405	" "
15	.01	400		S-4-01	TC-11	4G4-01	LT4S1	TP421	Audio Coupling
16	.1	400		S-4-1	TC-1	4G4-.1	DT4P1	TP428	Screen Bypass
17	.05	400		S-4-05	TC-15	4G4-05	DT4S5	TP426	AVC Filter
18	.05	400		S-4-05	TC-15	4G4-05	DT4S5	TP426	" "
19	250	500		MO.5-325	1FM1-325	1468-00025	SW5T25	MC240	Audio Plate Bypass
20	250	500		MO.5-325	1FM1-325	1468-00025	SW5T25	MC240	Phono Bypass
21	50	500		MO.5-45	1FM-45	1468-00005	SW5C5	MC225	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GILFILLAN PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	500KΩ	1	66PM1-14	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 22A per instructions
23A	500KΩ	1	66PM1-13	MR48	D13-133	M-60-Z	Tone Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

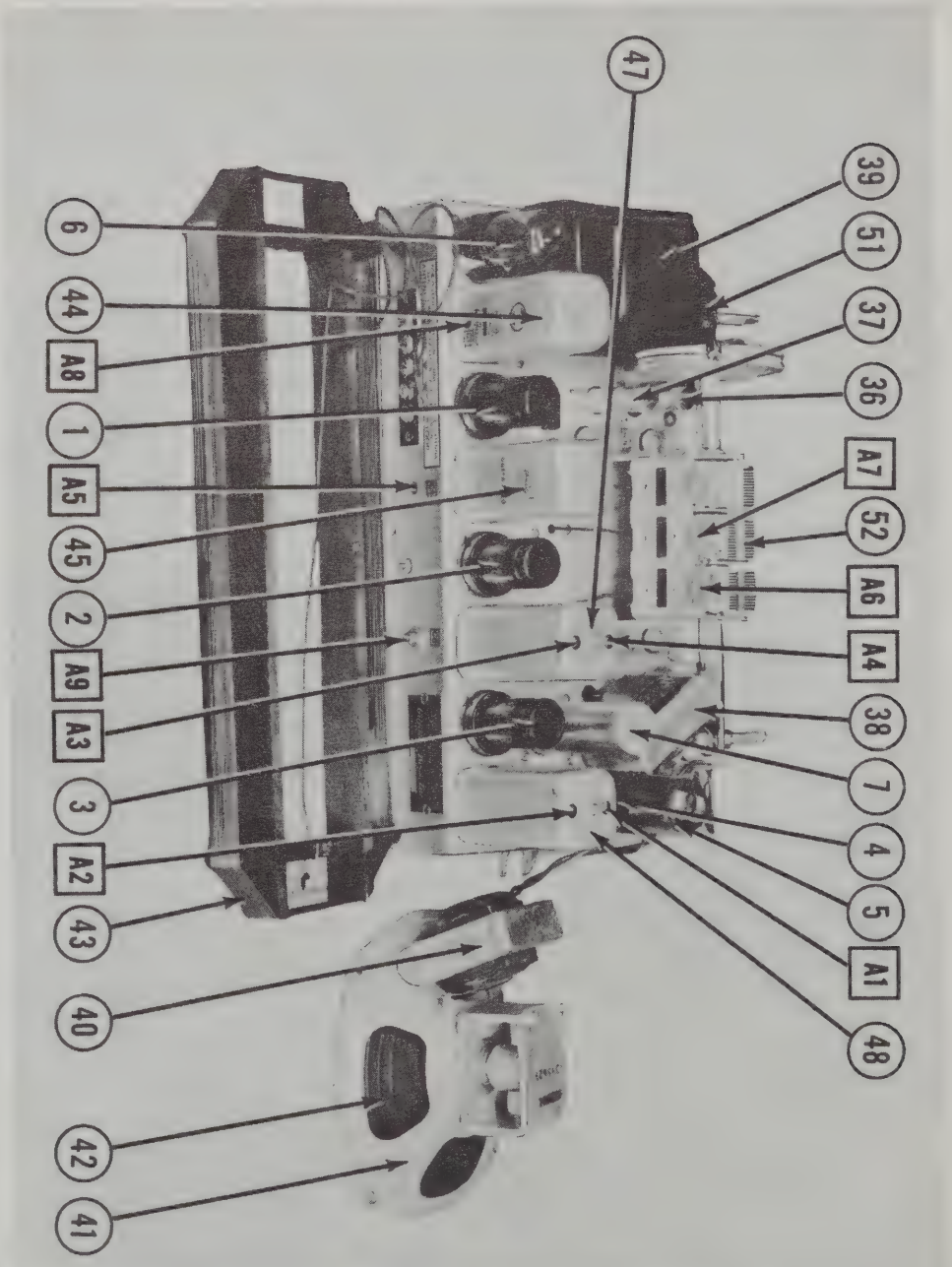
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GILFILLAN PART No.	IRC PART No.	IDENTIFICATION CODES
24	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
25	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
26	10KΩ	5		AB-10K	Br.-Blk.-Or. Screen Dropping
27	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
28	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Series Phono
29	270KΩ	½		BTS-270K	Red-Vi.-Yl. Tone Compensation
30	47KΩ	½		BTS-47K	Yl.-Vi.-Or. " "
31	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn. 1st. AF Grid
32	270KΩ	½		BTS-270K	Red-Vi.-Yl. " " Plate Load
33	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " " ". Filter
34	470Ω	1		BTA-470	Yl.-Vi.-Br. Output Cathode
35	2.5Ω	½		BW-½-2.7	Red-Grn.-Gold Series Pilot Light
36	1250Ω	5		AB-1250	Bias
37	1250Ω	5		AB-1250	"

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D.C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000~)	REPLACEMENT DATA: GILFILLAN PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	INSTALLATION NOTES
38	.063A	540Ω	18Henries	66PM1-16	C-1708	T20C53	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	GIFILLAN PART No.	STANCOR PART No.	THORDARSON PART No.	
39	117V AC @.440A	680V CT @.052A	6.4V AC @2.8A		66AM/PM-138	P-6120	T22R04	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		GIFILLAN PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
40	5600Ω	3.6Ω	540Ω	.4Ω	66PM-15	A-3877	T22S46		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			GILFILLAN PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-111		
41	PM	3.6Ω	66PM-8	Mod.P6-V		
	CONE DIA.	VC DIA.				
42	6"	½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

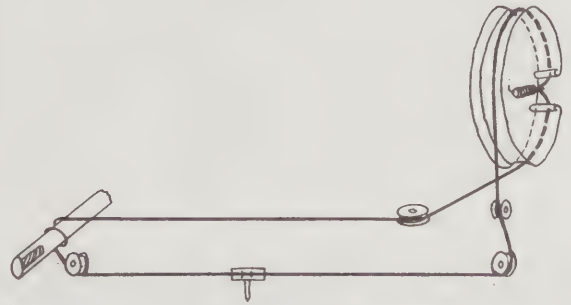
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	GILFILLAN PART No.	MEISSNER PART No.	
43	Loop Ant.		1.5Ω	66PM-29		
44	Ant. Coil	80Ω	7.5Ω	66PM-214	14-7558	
45A	RF Coil	80Ω	4Ω	66PM-200		Items 45A, 45B in same can
45B	Wave Trap	77Ω		66PM-200		
46	Osc. Coil	1.5Ω	8.5Ω	66AM/PM-37	14-1040	
47	Input IF	28Ω	28Ω	66AM/PM-34	16-6658	
48	Output IF	28Ω		66AM/PM-35	16-6370	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					GILFILLAN PART No.		
49	Bayonet	6-8	.25	Blue			Type 44
50	Bayonet	6-8	.25	Blue			Type 44

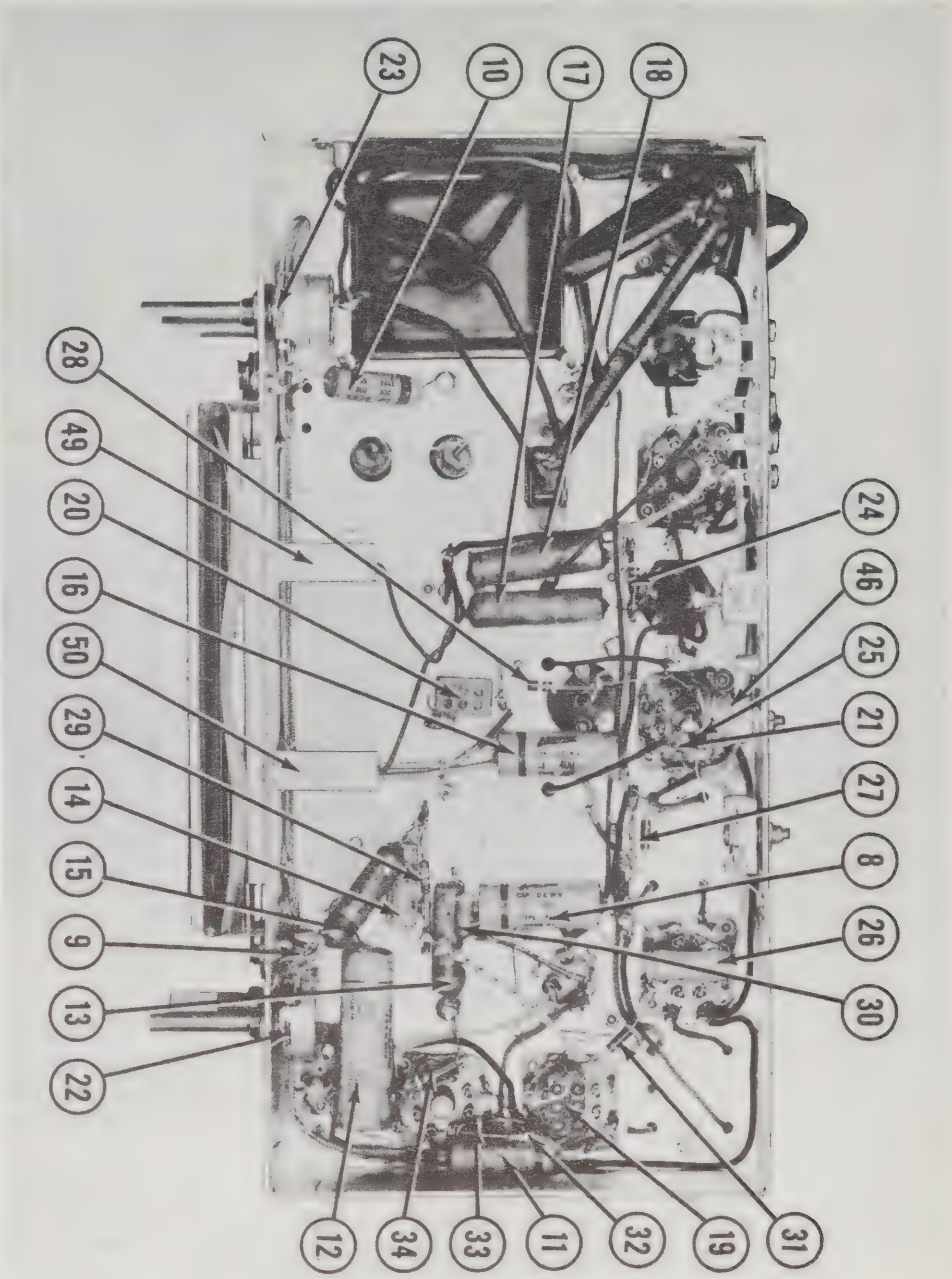
MISCELLANEOUS

ITEM No.	PART NAME	GILFILLAN PART No.	NOTES
51	Switch		Radio-Phono
52	Tuning Cap.	66AM/PM-420	3 Gang Variable Cap.

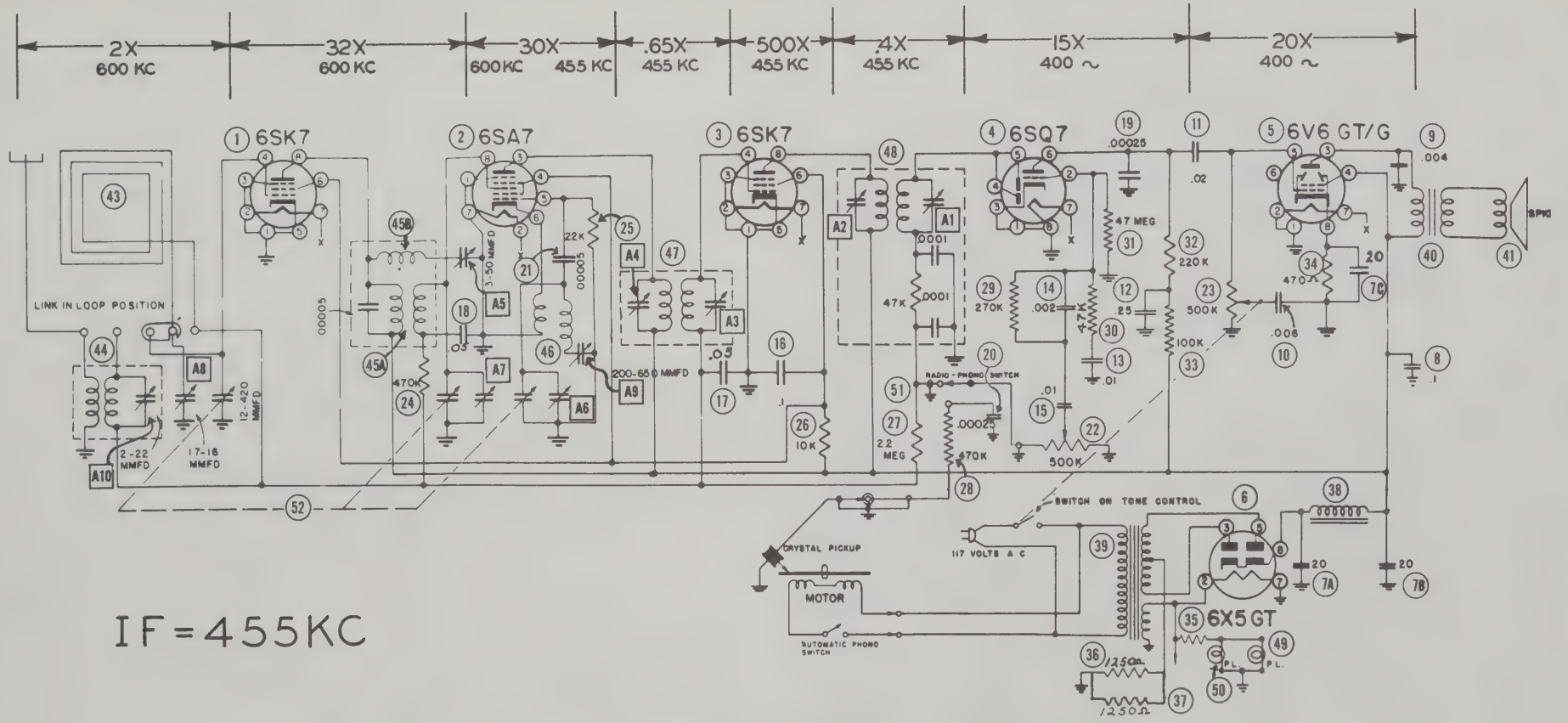


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



GILFILLAN MODELS 66P, 66PM



IF = 455KC

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN RADIO POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	-3V.DC	0V.	85V.DC	6.4V.AC	222V.DC
2	6SA7	0V.	6.4V.AC	222V.DC	85V.DC	-1V.DC	0V.	0V.	-2V.DC
3	6SK7	0V.	0V.	0V.	-3V.DC	0V.	85V.DC	6.4V.AC	222V.DC
4	6SQ7	0V.	-4V.DC	0V.	-5V.DC	-5V.DC	90V.DC	6.4V.AC	0V.
5	6V6GT/G	0V.	0V.	207 V.DC	222V.DC	0V.	188V.DC	6.4V.AC	14V.DC
6	6X5GT	0V.	0V.	325V.AC	0V	325V.AC	0V.	6.4V.AC	272V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	2.5MEG.	0Ω	210KΩ	.1Ω	200KΩ
2	6SA7	0Ω	.1Ω	200KΩ	210KΩ	21KΩ	1Ω	0Ω	2.9MEG.
3	6SK7	0Ω	0Ω	0Ω	2.5MEG.	0Ω	210KΩ	.1Ω	200KΩ
4	6SQ7	0Ω	4 MEG.	0Ω	590KΩ	590KΩ	520KΩ	.1Ω	0Ω
5	6V6GT/G	0Ω	0Ω	200KΩ	200KΩ	460KΩ	300KΩ	.1Ω	400Ω
6	6X5GT	INF.	0Ω	800Ω	INF.	780Ω	INF.	.1Ω	200KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

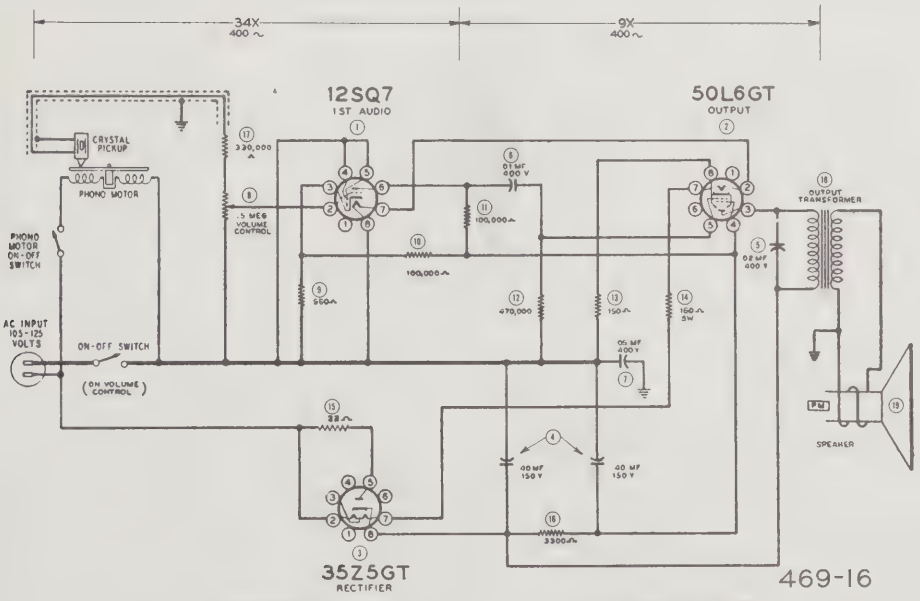
469-15

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GRANTLINE MODEL 300

TRADE NAME	Grantline Model 300 - Series B
SUPPLIER	W. T. Grant Co., 1441 Broadway, New York, N.Y.
TYPE SET	AC Operated Record Player with 3 Tube Amp. & Speaker
TUBES (THREE)	Types, 12SQ7GT 1st Audio, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .240 Amps. @ 117V AC



469-16

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SQ7GT	0V.	-1V.DC	85V.DC	0V.	0V.	77V.DC	12 V.AC	0V.
2	50L6GT	0V.	12V.AC	122V.DC	115V.DC	0V.	0V.	62V.AC	7.4V.DC
3	35Z5GT	0V.	117V.AC	111V.AC	0V.	116V.AC	130V.DC	85V.AC	130V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SQ7GT	INF.	450KΩ	530Ω	0Ω	0Ω	140KΩ	12Ω	0Ω
2	50L6GT	INF.	12Ω	40KΩ	40KΩ	430KΩ	INF.	55Ω	165Ω
3	35Z5GT	INF.	235Ω	230Ω	INF.	255Ω	40KΩ	205Ω	40KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA GRANTLINE PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	1st Audio	12SQ7GT	12SQ7GT	8Q	
2	Power Output	50L6GT	50L6GT	7AC	
3	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA GRANTLINE PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
4A	40	150	A8C11415-1	DY-2x40-150	EL-25	AF88D	UP4415	FP214	Filter - Red*
B	40	150							" - Blue
4A	40	150	A-8C-11119	DY-2x40-150	EL-25	AF88D	UP4415	FP214	■ Filter *
B	40	150							▲ "
5	.02	400	C-8D-10774	S-4-02	TC-12	484-02	DT4S2	TP423	Output Plate Bypass
6	.01	400	C-8D-10761	S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
7	.05	400	C-8D-10813	S-4-05	TC-15	484-05	DT4S5	TP426	Line Isolation

*Either filter may be used.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA GRANTLINE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
8A	500KΩ	1	A-10A-11377	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 8A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA GRANTLINE PART No.	IRC PART No.	IDENTIFICATION CODES
9	560Ω	½	C-9B1-59	BTS-560	Grn.-blue-Br. 1st AF Cathode
10	100KΩ	½	C-9B1-66	BTS-100K	Br.-Blk.-Yl. Bleeder
11	100KΩ	½	C-9B1-25	BTS-100K	Br.-Blk.-Yl. 1st AF Plate Load
12	470KΩ	½	C-9B1-29	BTS-470K	Yl.-Vi.-Yl. Output Grid
13	150Ω	½	C-9B1-3	BW-½-150	Br.-Grn.-Br. Output Cathode
14	160Ω	5	A-9C-11355	AB-150	Line Dropping
15	22Ω	½	C-9B1-3	BW-½-22	Red-Red-Blk. Rectifier Ballast
16	3300Ω	½	C-9B1-16	BTS-3300	Or.-Or.-Red Filter
17	330KΩ	½	C-9B1-26	BTS-330K	Or.-Or.-Yl. Series Phono

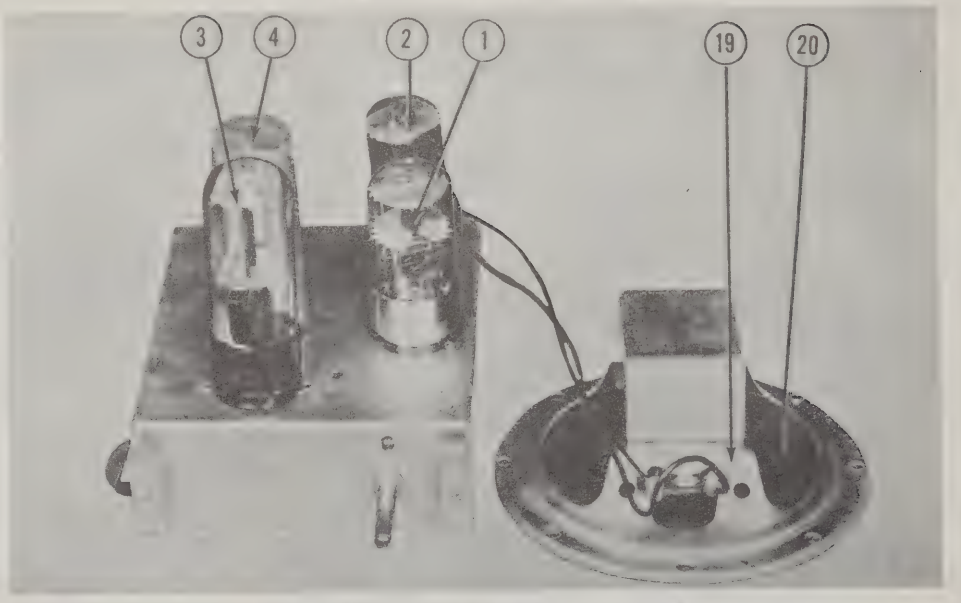
TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA GRANTLINE PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
18	2300Ω	3.4Ω	190Ω	.7Ω	B-12C-10074-3	A-3876	T-22S45		

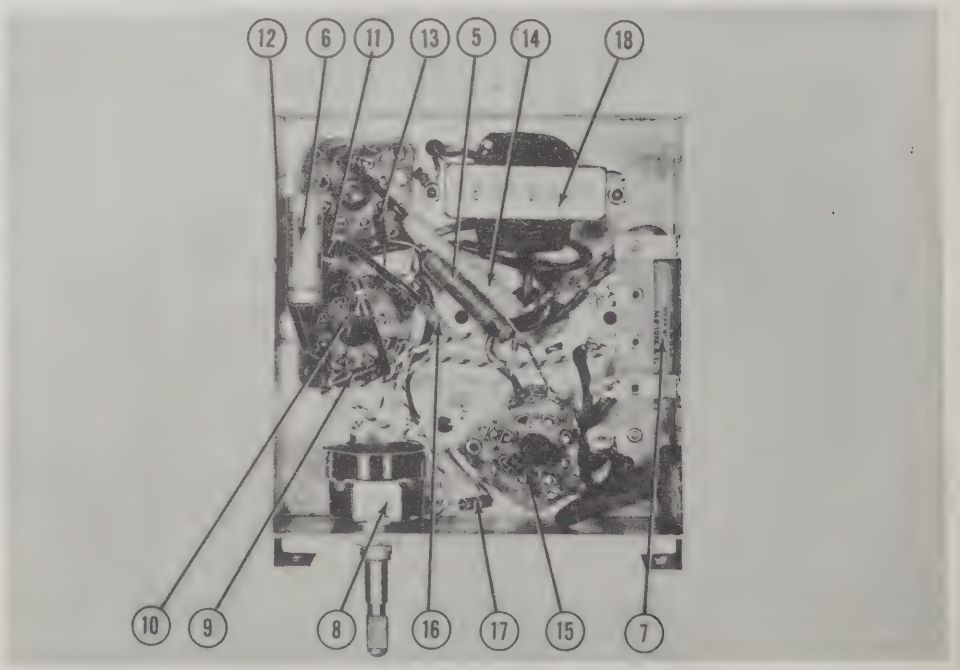
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA GRANTLINE PART No.	JENSEN PART No.		INSTALLATION NOTES
19A	FIELD	VC IMP.		ST-107		
	PM	3.4Ω	B-18A-10592	Mod. P5-V		
B			B-18A-11381			Alternate Speaker (Oval)
20	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			
	4¼"	½"				

CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



GRANTLINE
MODELS 500, 501

GRANTLINE
MODELS 500, 501

GRANTLINE MODEL 500

TRADE NAME	Grantline Models 500, 501 Series A
SUPPLIER	W. T. Grant Co., 1441 Broadway, New York, N.Y.
TYPE SET	AC - DC Superheterodyne - Self Contained Antenna Plate
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC-DC
TUNING RANGE—BROADCAST	545-1700KC RATING .230 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation trans. if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output of signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to metal ant. plate. Low side to B-.	455KC	High freq. end. (Cores out of coils.)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
.1 MFD.	"	1720KC	"	"	A5	"
200 MMF	High side to ext. ant. clip. Low side to B-.	"	"	"	A6	Adjust for maximum output.
200 MMF	"	1400KC	Tune for maximum output.	"	Ant. Coil.	Move ant. coil assembly up and down for maximum output. Recheck A6 at 1720KC.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: GRANTLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT	12SA7GT	8A1	
2	1st AM.	12SK7GT	12SK7GT	7K	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	6Q	
4	Power Output	50L6GT	50L6GT	7A5	
5	Rectifier	35Z5GT	35Z5GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GRANTLINE PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	40	150	119-92	DY-4020-150	EL-24	AF88D	UP4CJ59†	FP3061	■ Filter
B	20	150							▲ "
7	.05	400	C-8D-10813	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
8	.01	400	C-8D-10761	S-4-01	TC-11	484-01	DT4S1	TP421	50L6 Plate Bypass
9	.004	600	C-8D-10788	S-6-004	TC-24	684-004	DT6D4	TP407	Audio Coupling
10	.002	600	C-8D-10789	S-6-002	TC-22	684-002	DT6D2	TP405	" "
11	.05	200	C-8D-10770	S-4-05	TC-15	484-05	DT4S5	TP426	RF Bypass Pwr. Supp
12	.15	400	C-8D-10953	S-4-1	TC-1	484-.15	DT4P1	TP417	Line Isolation
13	.05	200	C-8D-10770	S-4-05	TC-15	484-05	DT4S1	TP426	AVC Filter
14	470	500	C-8F6-121	M0.5-35	1FM-35	1468-0005	5W5T5	MC245	Audio Plate Bypass
15	220	500	C-8F3-10	M0.5-32	1FM-32	1468-0002	5W5T2	MC237	IF Bypass Vol. Cont
16	47	500	C-8F3-6	M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
17	330	500	C-8F3-11	M0.5-33	1FM-33	1468-0003	5W5T3	MC241	Ant. Coupling

†Do not use bypass section

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GRANTLINE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	1	101196	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 18A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

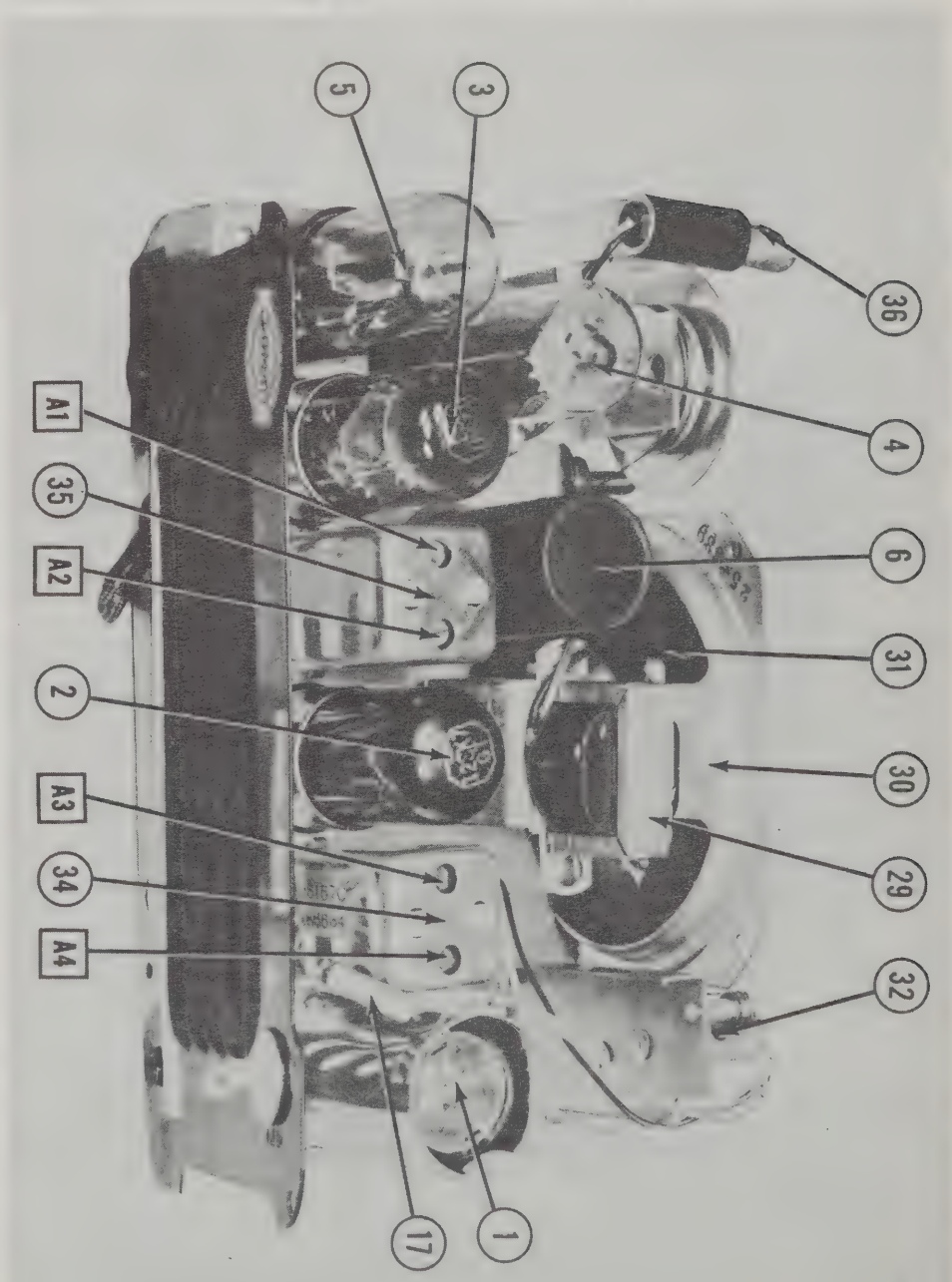
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GRANTLINE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
19	22KΩ	½	C-9B1-78	BTS-22K	Red-Red-Or. Oscillator Grid
20	150KΩ	½	C-9B1-26	BTS-150K	Br.-Grn.-Yl. Line Isolation
21	1200Ω	1	9-9B2-63	BTA-1200	Br.-Red-Red Filter
22	3.3 Meg.	½	C-9B1-34	BTS-3.3 Meg	Or.-Or.-Grn. AVC Network
23	4.7 Meg.	½	C-9B1-35	BTS-4.7 Meg	Yl.-Vi.-Grn. 1st AF Grid
24	22Ω	½	9-9B1-42	BW-½-22	Red-Red-Blk. Rectifier Ballast
25	150KΩ	½	C-9B1-26	BTS-150K	Br.-Grn.-Yl. 1st AF Plate Load
26	470KΩ	½	C-9B1-28	BTS-470K	Yl.-Vi.-Yl. Output Grid
27	150Ω	½	C-9B1-52	BW-½-150	Br.-Grn.-Yl. Output Cathode
28	33Ω	1	C-9B2-44	BW-1-33	Or.-Or.-Blk. Line Dropping

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: GRANTLINE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.		INSTALLATION NOTES
29	8000Ω	3.2Ω	215Ω	.4Ω	Part of P-138-11154	A-3073*	T-22.41*		*Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: GRANTLINE PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
	[illegible]	[illegible]				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT.			

R F COILS

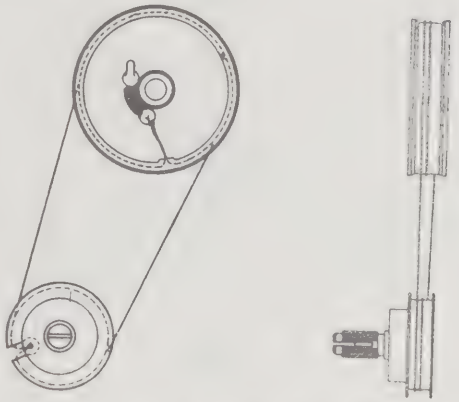
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: GRANTLINE PART No.	REPLACEMENT DATA: MEISSNER PART No.	INSTALLATION NOTES
32	Ant. Coil	9.5Ω		111136B		Iron core is #112-676
33	Osc. Coil	.8Ω	7Ω	110126		" " " #112-677
34	Input IF	35Ω	35Ω	108157C	16-6666	
35	Output IF	35Ω	35Ω	108157C	16-6667	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: GRANTLINE PART No.		INSTALLATION NOTES
36	Bayonet	6-8	0.15	brown	107249		Type 47

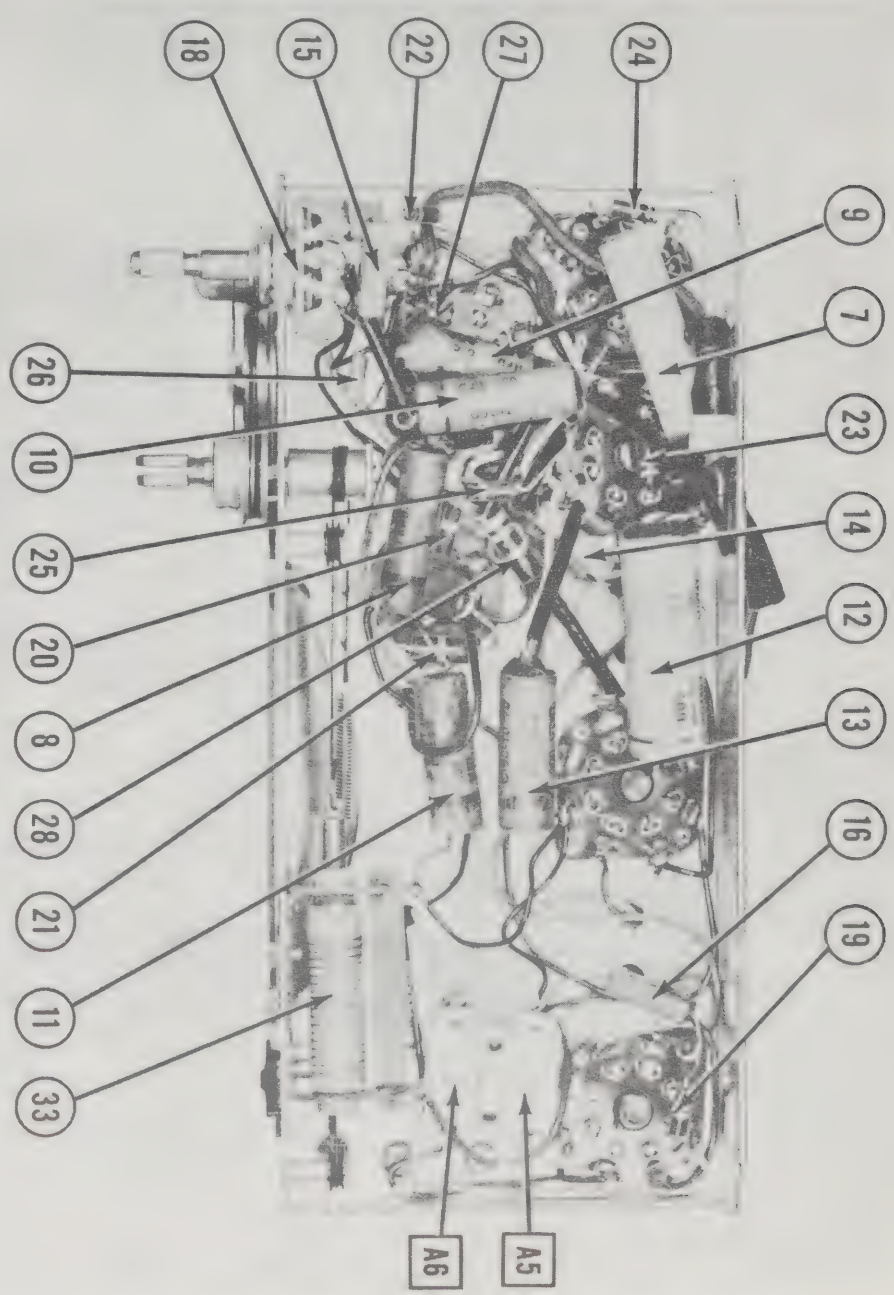
MISCELLANEOUS

ITEM No.	PART NAME	GRANTLINE PART No.	NOTES
A5 A6	Trimmer Cap. " "	124100	Osc. Adj. Ant. Adj.
	Ant. Plate	115-459-16	Walnut Finish (Back Cover)
	" "	115-459-9	Ivory " (" ")
	Cabinet	128-345-18	Walnut "
	"	128-345-9	Ivory "
	Knob	128-342-17	Walnut "
	"	128-342-8	Ivory "
	Dial Scale	112-673	(Calibrated)
	Pointer Misc.	112-675	



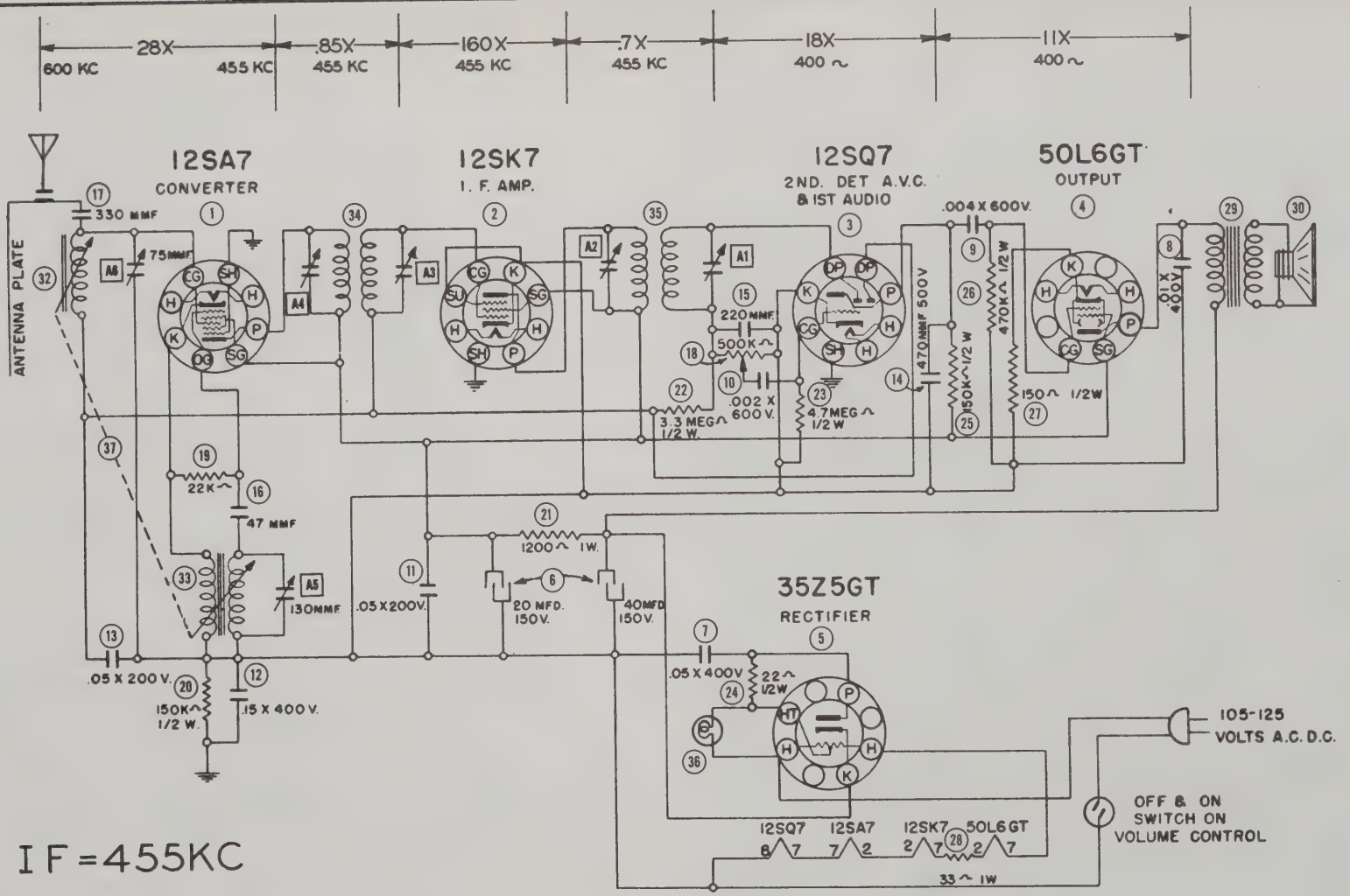
Dial Stringing View

CHASSIS—BOTTOM VIEW



GRANTLINE MODELS 500, 501

GRANTLINE MODELS 500, 501



IF=455KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	23.5V.AC	87V.DC	87V.DC	-3V.DC	0V.	12V.AC	-.3V.DC
2	12SK7GT	0V.	23.5V.AC	0V.	-.3V.DC	0V.	87V.DC	34V.AC	87V.DC
3	12SQ7GT	0V.	-.8V.DC	0V.	-.3V.DC	-.3V.DC	68V.DC	12V.AC	0V.
4	50L6GT	0V.	38.5V.AC	112V.DC	87V.DC	0V.	0V.	87V.AC	5.1V.DC
5	35Z5GT	0V.	117V.AC	113V.AC	0V.	112V.AC	0V.	87V.AC	117V.DC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

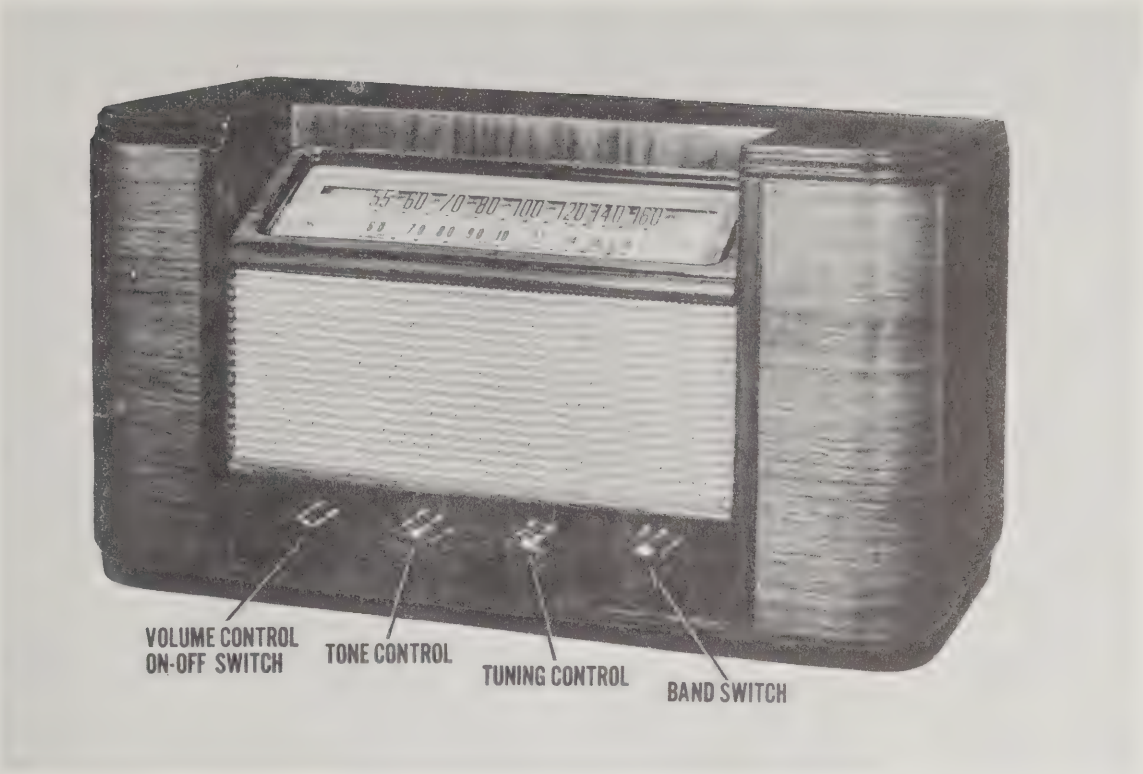
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	165KΩ	22Ω	25KΩ	25KΩ	20.5KΩ	.5Ω	11Ω	3.7MEG.
2	12SK7GT	165KΩ	22Ω	0Ω	3.7MEG.	0Ω	25KΩ	33Ω	25KΩ
3	12SQ7GT	165KΩ	5 MEG.	0Ω	430KΩ	3.7MEG.	175KΩ	11Ω	0Ω
4	50L6GT	165KΩ	62Ω	25KΩ	25KΩ	480KΩ	0Ω	103Ω	145Ω
5	35Z5GT	165KΩ	130Ω	127Ω	INF.	148Ω	INF.	103Ω	25KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-17

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



KNIGHT
MODEL 6A-122

KNIGHT
MODEL 6A-122

KNIGHT MODEL 6A-122

TRADE NAME	Knight Model 6A-122
SUPPLIER	Allied Radio Corp., 833 W. Jackson Blvd., Chicago, Ill.
TYPE SET	AC-DC 2 Band Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 12SG7 RF Amp., 12SA7 Converter, 12SK7 IF Amp., 12SQ7GT Det.-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC — RATING .240 Amps. @ 117V AC
TUNING RANGE—BROADCAST	538-1620KC — **SHORT WAVE** 5.7-18.3 MC.

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.2 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	BC	Any point of no interfering signal.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used reduce dummy Ant. to .001 MFD. to reduce excessive hum modulation.
250 MMF.	High side to ext. (blue) lead. Low side to chassis.	455KC	"	Low freq. end. (Variable fully closed)	"	A5	Adjust for minimum output.
"	"	1620KC	"	"	"	A6	Adjust for maximum output.
"	"	1400KC	"	Tune for maximum output.		A7	Adjust for maximum output. Some models use gimmick instead of trimmer.
"	"	600KC	"	"	"	A8	Rock variable and adjust for maximum output. Recheck A6 and A7.
400Ω	"	18.3MC	SW	High freq. end. (Variable fully open)	"	A9	Adjust for maximum output.
"	"	15.0MC	"	Tune for maximum output.	"	A10	Rock variable and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12SG7	12SG7	8BK	
2	Converter	12SA7	12SA7	8R	
3	IF Amp.	12SK7	12SK7	8N	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KNIGHT PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	25E6	DHN-2X50-150	EL-25	PRSA150-40-40	EZ5515	2N521	Filter - Yellow
B	50	150							" - Red
8	.05	400	23E416	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
9	.01	400	23E411	S-4-01	TC-11	484-01	DT4S1	TP421	35L6 Plate Bypass
10	.01	400	23E411	S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
11	.002	200	23E205	S-6-002	TC-22	484-002	DT6D2	TP405	Tone Compensation
12	.005	200	23E208	S-6-005	TC-25	484-005	DT6D5	TP408	Audio Coupling
13	.01	200	23E211	S-4-01	TC-11	484-01	DT4S1	TP421	IF Plate Bypass
14	.2	200	23E421	S-4-2	TC-2	484-.2	DT4P2	TP429	Line Isolation +
15	.01	200	23E211	S-4-01	TC-11	484-01	DT4S1	TP421	RF Bypass Pwr. Supp
16	.01	200	23E211	S-4-01	TC-11	484-01	DT4S1	TP421	RF Screen Bypass
17	.05	200	23E216	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
18	.005	400	23E408	S-6-005	TC-25	484-005	DT6D5	TP408	Ant. Coupling
19	100	500	23E39	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
20	250	500	23E42	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	IF Bypass Diode
21	100	500	23E39	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Filter
22	50	500	23E37	M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
23	2100	300	23E2000						Fixed Padder SW
24	250	500	23E42	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	RF Coupling

+Used in Underwriters approved models only.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KNIGHT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	500KΩ	1	28E7	MK401 *	D13-133 *	AM-60-Z *	Volume Control *See Note 1 & 2.
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 25A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
26A	500KΩ	1	28E8	MK401 *	D13-133 *	AM-60-Z*	Tone Control *See Note 2
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 26A per instructions

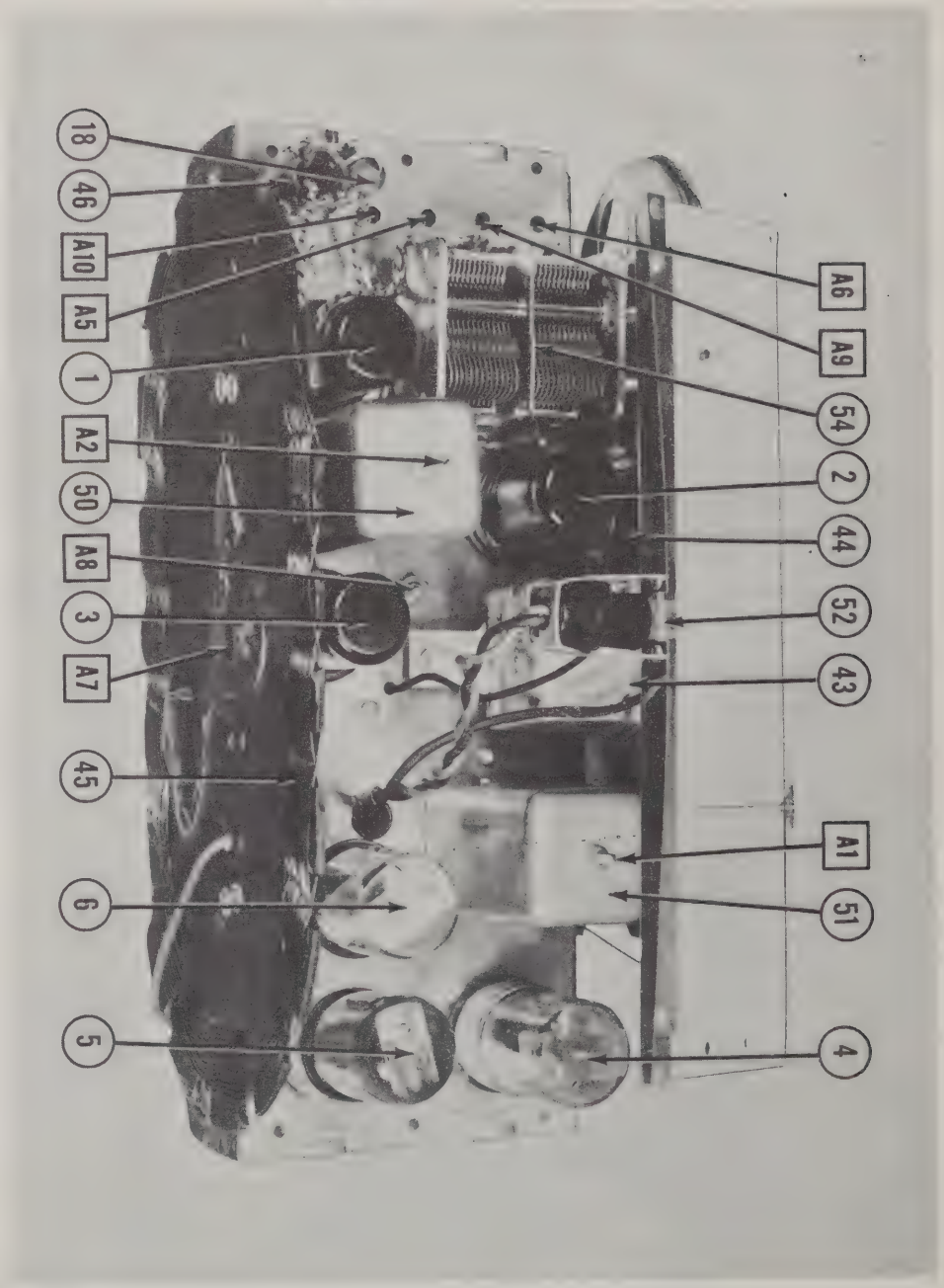
Note 1: Install a 50KΩ resistor in series with the right terminal of the control and the lead connecting to the same terminal of the original control. (Control viewed from shaft side, terminals down.)

Note 2: Wrap scotch tape around shaft adjacent to lock ring for drive cord surface.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KNIGHT PART No.	IRC PART No.	IDENTIFICATION CODES
27	56Ω	1/3	27E560	BW-½-56	Grn.-Blue-Blk. RF Cathode
28	10KΩ	1/3	27E103	BTS-10K	Br.-Blk.-Or. " Screen Dropping
29	8200Ω	1/3	27E822	BTS-8200	Gray-Red-Red " Plate Load
30	220KΩ	1/3	27E224	BTS-220K	Red-Red-Yl. Converter Grid
31	22KΩ	1/3	27E223	BTS-22K	Red-Red-Or. Oscillator "
32	220KΩ	1/3	27E224	BTS-220K	Red-Red-Yl. Line Isolation See Note 1
33	3.3 Meg.	1/3	27E335	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
34	470Ω	1/3	27E471	BTS-470	Yl.-Vi.-Br. IF Plate Decoupling
35	3.3 Meg.	1/3	27E335	BTS-3.3 Meg.	Or.-Or.-Grn. 1st AF Grid
36	470KΩ	1/3	27E474	BTS-470K	Yl.-Vi.-Yl. " " Plate Load
37	470KΩ	1/3	27E474	BTS-470K	Yl.-Vi.-Yl. Output Grid
38	150Ω	1/3	27E151	BW-½-150	Br.-Grn.-Br. " Cathode
39	1000Ω	1	27E102-3	BTA-1000	Br.-Blk.-Red Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

40	47Ω	1/2	27E470-2	BW-½-47	Yl.-Vi.-Blk.	Rectifier Ballast
41	100Ω	1/2	27E101-2	BW-½-100	Br.-Blk.-Br.	Pilot Light Shunt

Note 1: Used in Underwriters approved models only.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		KNIGHT PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
42	4500Ω	3.5Ω	248Ω	.43Ω	22E8	A-3877‡	T-22S62‡		‡ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			KNIGHT PART No.	JENSEN PART No.		
43	FIELD PM	VC IMP. 3.5Ω	1E1			
44	CONE DIA. 4"x6"	VC DIA. 2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

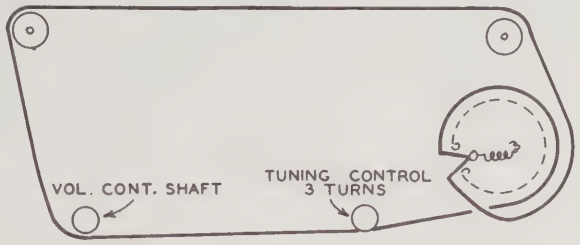
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	KNIGHT PART No.	MEISSNER PART No.	
45	Loop Ant.	0Ω	.8Ω	20E105		
46	SW Ant. Coil	.5Ω	0Ω	20E72	14-1044	
47	Wave Trap	55Ω		2E19		
48	BC Osc. Coil	.5Ω	7Ω	20E102	14-1040	
49	SW Osc. Coil	0Ω	0Ω	20E103	14-1046	
50	Input IF	11Ω	11Ω	20E21	16-5740	
51	Output IF	11Ω	10Ω	20E22	16-5742	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					KNIGHT PART No.		
52	Bayonet	6-8	0.15	Brown	40E1		Type 47

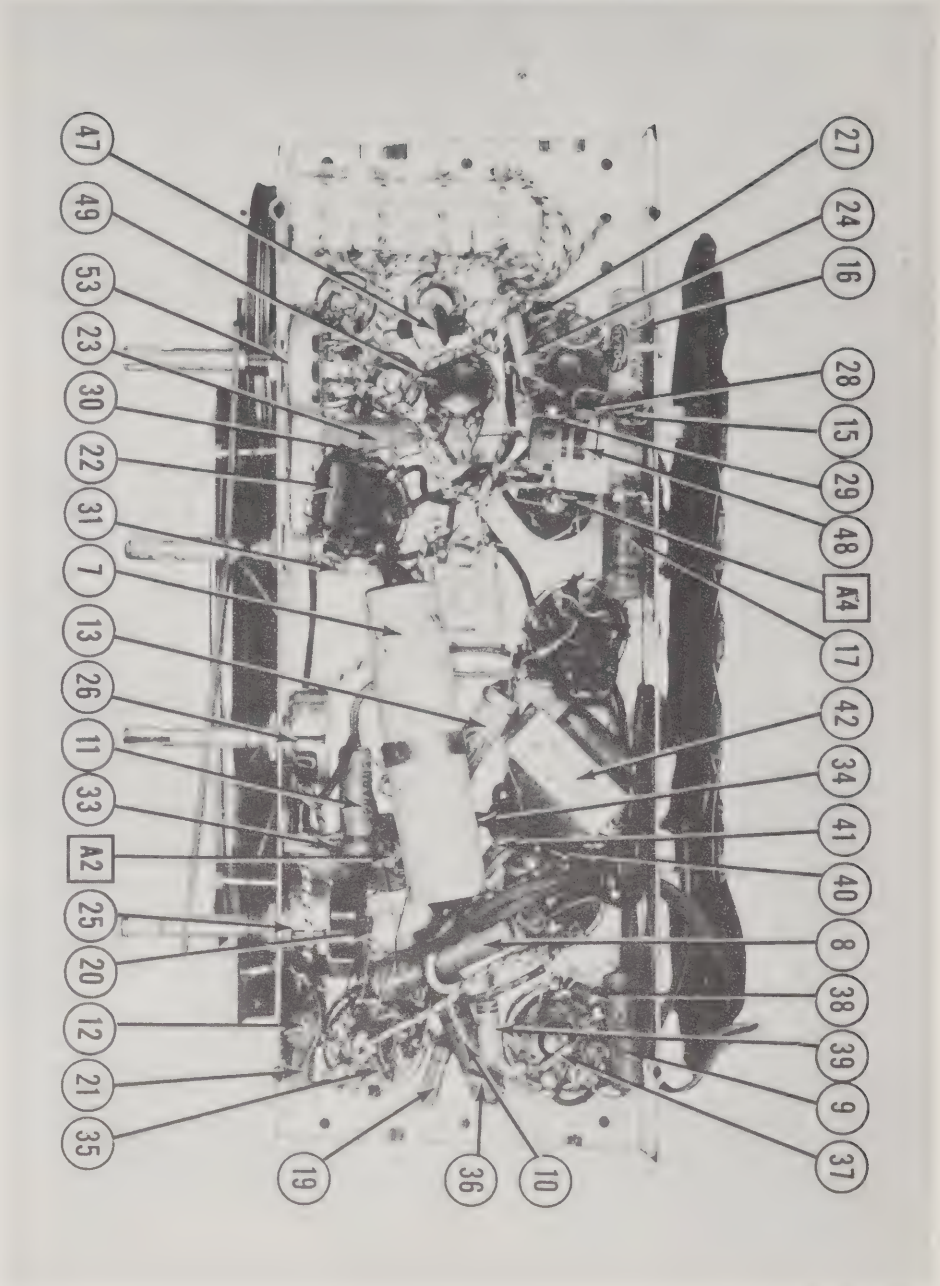
MISCELLANEOUS

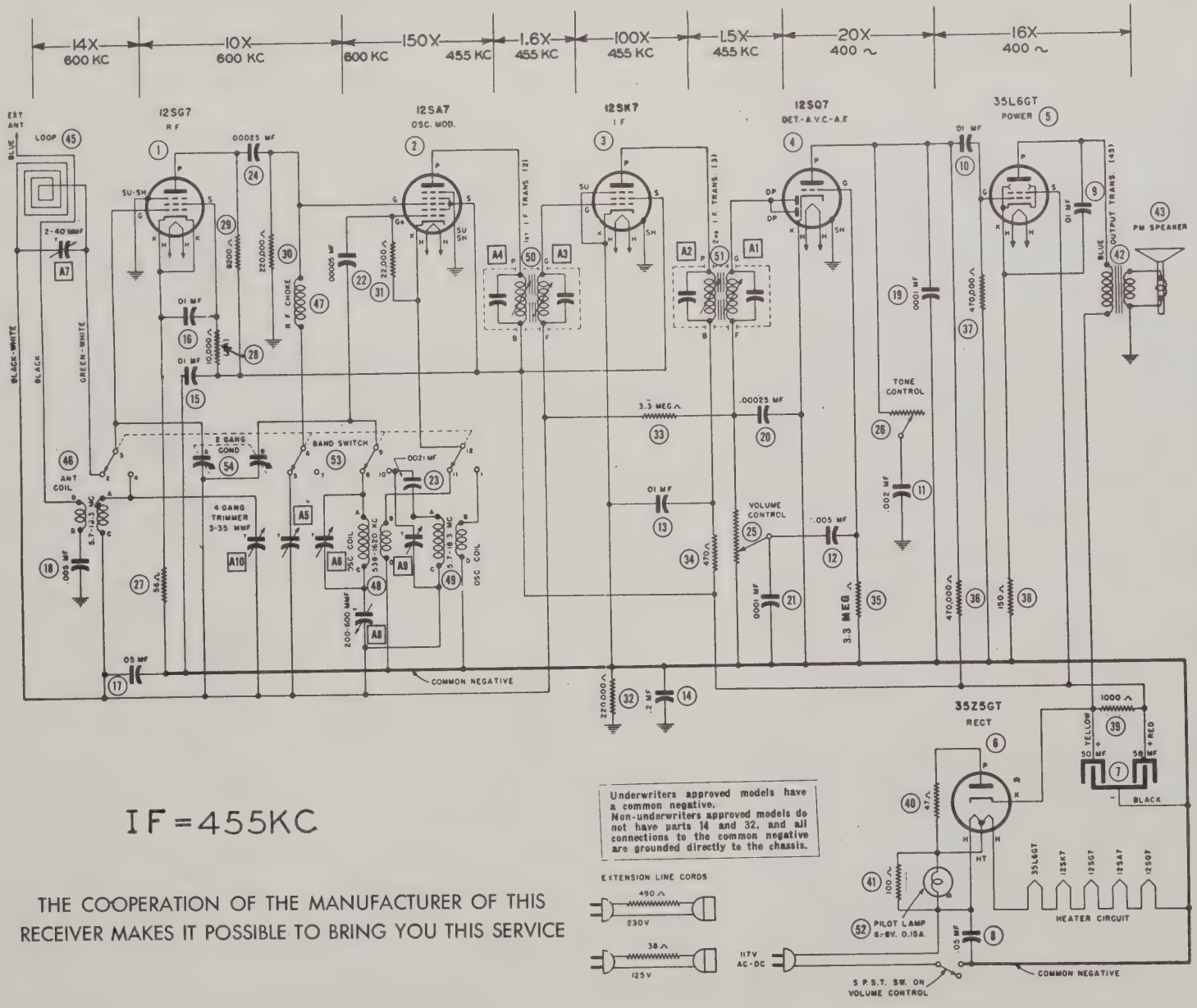
ITEM No.	PART NAME	KNIGHT PART No.	NOTES
53	Band Switch	29E8	
54	Tuning Cap.	24E9	2 Gang Variable Cap.
	Trimmer Cap.	24E3	2-40 MMF (on loop)
	" "	24E15	4 Gang Strip
	Padder Cap.	24E16	200-600 MMF
	Cabinet	7E100	
	Dial Scale	36E28-1	Calibrated Glass Scale
	Dial Pointer	35E13	
	Dial Crystal	9E5	



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





Pin No.	12SG7 Volt.	12SG7 Res	12SA7 Volt	12SA7 Res.
1	0V.	0Ω	0V.	0Ω
2	25.5V.AC	23Ω	25.5V.AC	23Ω
3	.3V.DC	54Ω	87V.DC	80KΩ
4	-.3V.DC	3.2MEG.	87V.DC	80KΩ
5	.3V.DC	54Ω	-.2V.DC	27KΩ
6	68V.AC	90KΩ	0V.	.5Ω
7	38V.AC	33Ω	13V.AC	12Ω
8	57V.DC	88KΩ	-.2V.DC	215KΩ

Pin No.	12SK7 Volt.	12SK7 Res	12SQ7GT Volt	12SQ7GT Res.
1	0V.	0Ω	0V.	0Ω
2	38V.AC	33Ω	-65V.DC	2.7MEG.
3	0V.	0Ω	.0V.	0Ω
4	-.3 V.DC	3.2MEG.	-.35V.DC	500KΩ
5	0V.	0Ω	-.35V.DC	500KΩ
6	87 V.DC	80KΩ	45V.DC	550KΩ
7	52 V.AC	45Ω	0V.	0Ω
8	82V.DC	80KΩ	13V.AC	12Ω

Pin No.	35L6GT Volt.	35L6GT Res	35Z5GT Volt	35Z5GT Res.
1	0V.	0Ω	0V.	INF.
2	52V.AC	45Ω	117V.AC	100Ω
3	107V.DC	80KΩ	113VAC	97Ω
4	87V.DC	80KΩ	87V.DC	80KΩ
5	0V.	500KΩ	111V.AC	138Ω
6	0V.	INF.	0V.	INF.
7	88VAC	73Ω	88VAC	73Ω
8	46 V.DC	135Ω	113V.DC	80KΩ

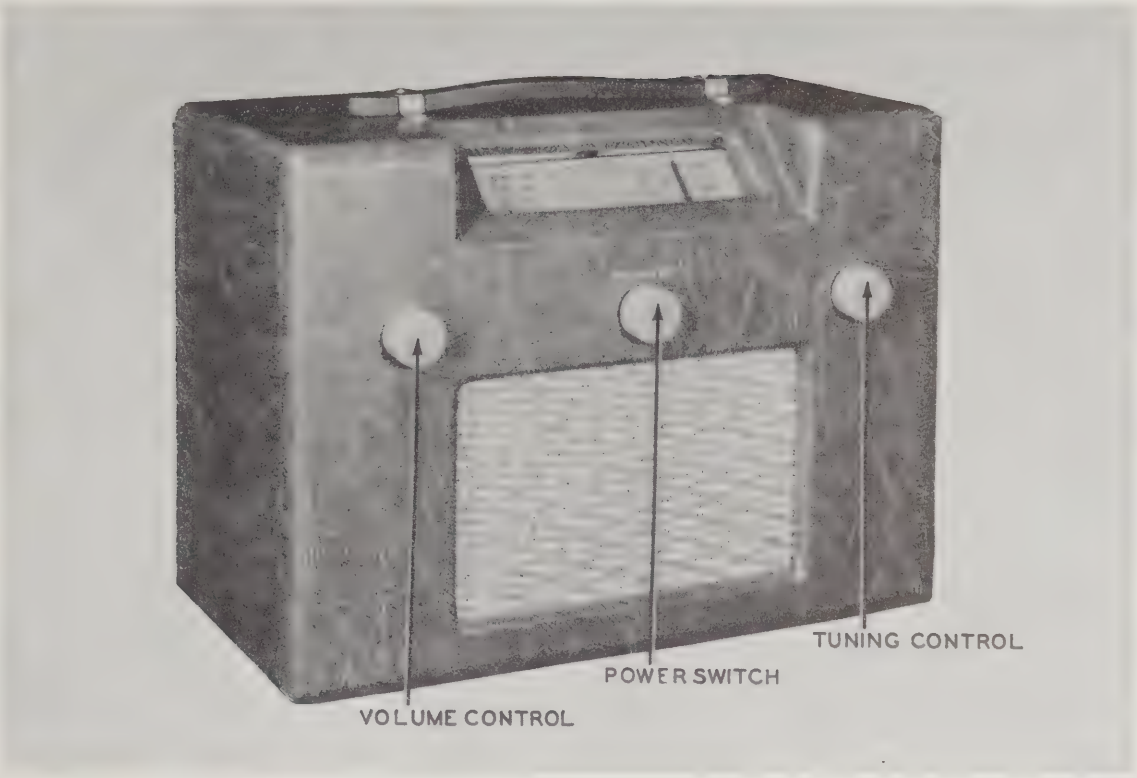
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

469-18

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



KNIGHT
MODEL 6A-127

KNIGHT MODEL 6A-127

TRADE NAME	Knight Model 6A-127
SUPPLIER	Allied Radio Corp., 833 W. Jackson Blvd., Chicago 7, Ill.
TYPE SET	Three Power Portable Superheterodyne Receiver - Self Contained Loop Antenna
TUBES (SIX)	Types, 1N5GT RF Amp., 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output, 117Z6GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC or 2-4½ Volt "A" Batteries & 2-45 Volt "B" Batteries
RATING	.195 Amps. @ 117V AC - 56MA @ 9 Volts DC and 12MA @ 90 Volt DC
TUNING RANGE—BROADCAST	535-1650KC

ALIGNMENT INSTRUCTIONS

When set is aligned on AC-DC use isolation transformer if available. If not, connect a capacitor in series with the low side of the signal generator and common negative. Volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.2 MFD.	High side to grid cap of 1A7. Low side to common negative.	455KC	Any point where no interfering signal is received.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
Direct	Across 1 megohm resistor.	"	Variable fully closed.	"	A5	Disconnect the white-green and white-black loop connection wires from the loop ant. trimmer. Attach a 1 megohm resistor across these wires and feed output of signal generator across this resistor. Adjust for minimum.
Direct	"	1650KC	Variable fully open.	"	A6	Adjust for maximum output.
Direct	High side to ext. ant. clip. Low side to ext. ground.	1400KC	Tune for maximum output.	"	A7	Remove 1 megohm resistor and reconnect loop ant. trimmer. Reinstall chassis in cabinet & adjust A7 for maximum output with the back in closed position

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: KNIGHT PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	
6	Rectifier	117Z6GT	117Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: KNIGHT PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	50	150	25E1	DY-2x50-150	EL-25	AF1010D	UP4BJ33	FP214	■ Filter
B	50	150							▲ "
8A	40	25	25E4	DY-2x40-150	EL-242	AF88D		UP520†	■ Fil. Filter
B	40	25							▲ " "
9	.002	400	23E405	S-6-002	TC-22	484-002	DT6D2	TP405	Line Isolation
10	.05	400	23E416	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
11	.005	400	23E408	S-6-005	TC-25	484-005	DT6D5	TP408	RF Bypass Pwr. Supp.
12	.1	400	23E418	S-4-1	TC-1	484-.1	DT4P1	TP428	Screen Bypass
13	.003	400	23E406	S-6-003	TC-23	484-003	DT6D3	TP406	3Q5 Plate Bypass
14	.05	400	23E416	S-4-05	TC-15	484-05	DT4S5	TP426	Audio Coupling
15	.1	200	23E218	S-4-1	TC-1	484-.1	DT4P1	TP428	Audio Plate Decoup.
16	.003	400	23E406	S-6-003	TC-23	484-003	DT6D3	TP406	Audio Coupling
17	.05	200	23E216	S-4-05	TC-15	484-05	DT4S5	TP426	IF Grid Capacitor
18	.05	400	23E416	S-4-05	TC-15	484-05	DT4S5	TP426	Conv. Screen Bypass
19	.1	200	23E218	S-4-1	TC-1	484-.1	DT4P1	TP428	Filament Bypass
20	.1	200	23E218	S-4-1	TC-1	484-.1	DT4P1	TP428	" "
21	.05	200	23E216	S-4-05	TC-15	484-05	DT4S5	TP426	RF Screen Bypass
22	.1	200	23E218	S-4-1	TC-1	484-.1	DT4P1	TP428	Filament Bypass
23	.2	400	23E421	S-4-2	TC-2	484-.2	DT4P2	TP429	Line Isolating*
24	.1	200	23E218	S-4-1	TC-1	484-.1	DT4P1	TP428	AVC Filter
25	100	500	23E39	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
26	100	500	23E39	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Grid Bypass
27	100	500	23E39	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Bypass Vol. Cont.
28	250	500	23E42	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	Osc. Grid Capacitor
29	250	500	23E42	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	RF Coupling

CONTROLS

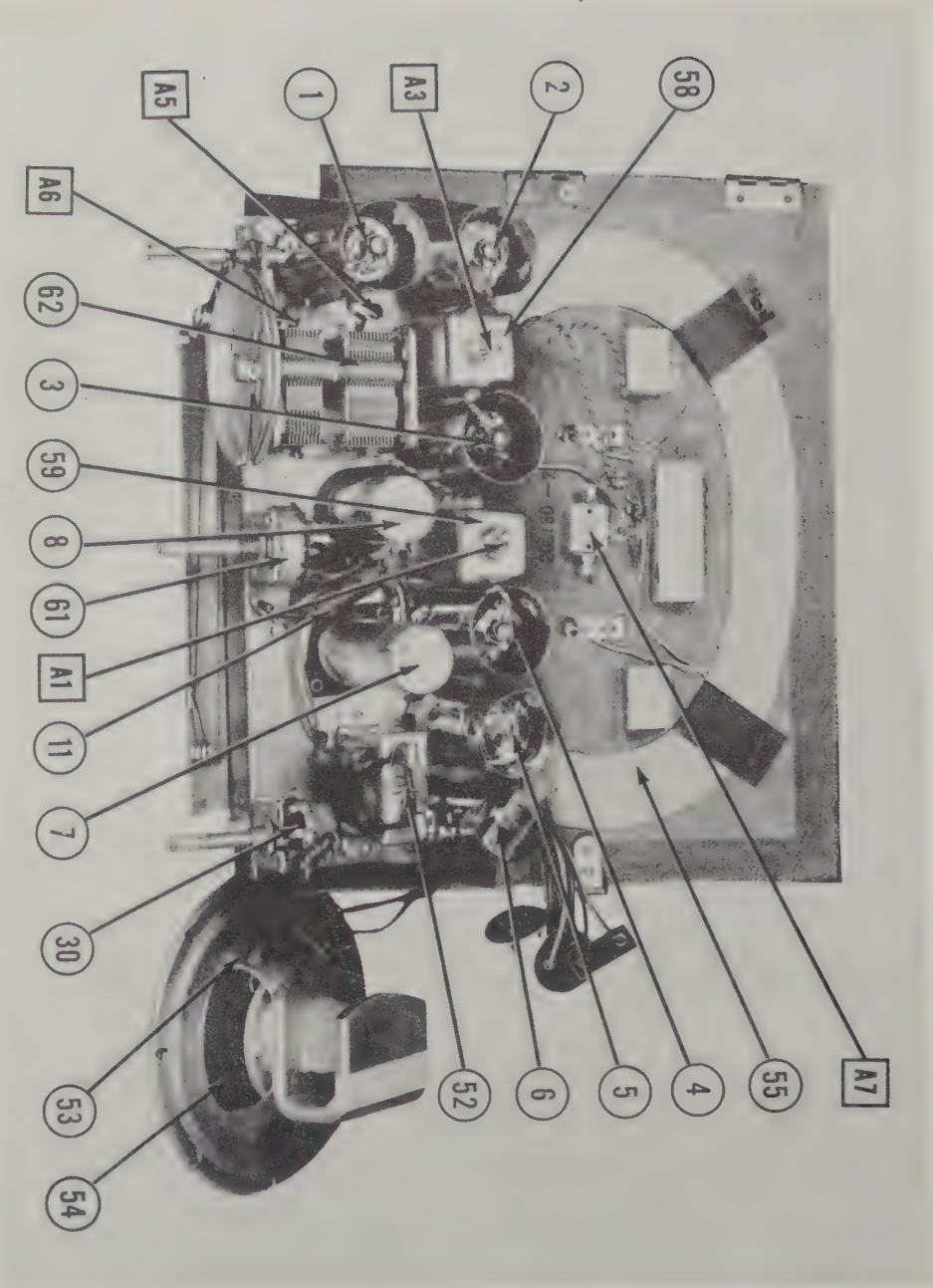
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KNIGHT PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
30A	1 Meg.	1	28E6	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 30A per instructions.
30A	1 Meg.	1	28E12*	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 30A per instructions.

RESISTORS.

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: KNIGHT PART No.	IRC PART No.	IDENTIFICATION CODES
31	22KΩ	1/3	27E223	BTS-22K	Red-Red-Or. RF Screen Dropping
32	47KΩ	1/3	27E473	BTS-47K	Yl.-Vi.-Or. RF Plate Load
33	6.8 Meg.	1/3	27E685	BTS-6.8 Meg	Blue-Gray-Grn. AVC Network
34	6.8 Meg.	1/3	27E685	BTS-6.8 Meg	Blue-Gray-Grn. AVC Network
35	220KΩ	1/3	27E224	BTS-220K	Red-Red-Yl. Converter Grid
36	560Ω	1/3	27E561	BTS-560	Grn.-Blue-Br. Filament String
37	100KΩ	1/3	27E104	BTS-100K	Br.-Blk.-Yl. Osc. Grid
38	390Ω	1/3	27E391	BW-½-390	Or.-White-Br. Filament String
39	68KΩ	1/3	27E683	BTS-68K	Blue-Gray-Or. Osc. Screen Dropping
40	270KΩ	1/3	27E1002	BTS-270K	Red-Vi.-Yl. IF Grid
41	3.3 Meg.	1/3	27E335	BTS-3.3 Meg	Or.-Or.-Grn. AVC Network
42	10 Meg.	1/3	27E106	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
43	1 Meg.	1/3	27E105	BTS-1 Meg.	Br.-Blk.-Grn. 1st AF Plate Load
44	100KΩ	1/3	27E104	BTS-100K	Br.-Blk.-Yl. 1st AF Plate Filter
45	1 Meg.	1/3	27E105	BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
46	390Ω	1/3	27E391	BW-½-390	Or.-White-Br. Filament String
47	560Ω	1/3	27E561	BTS-560	Grn.-Blue-Br. Filament String

*Used in Underwriters approved models only.
†Do not use last section.

CHASSIS—TOP VIEW



48	220KΩ	1/3	27E224	BTS-220K	Red-Red-Yl. Line Isolating*
49	68Ω	1/3	27E380	BW-½-68	Blue-Gray-Blk. B+ Lead Bat. Position*
50	75Ω	2	27E1001	BW-2-82	Vi.-Grn.-Blk. Pilot Light Shunt
51	500Ω-1900Ω	10	27E1000	ABA-2500‡	Filter & Filament Dropping

‡Adjust tap to 500Ω from one end.
*Used in Underwriters approved models only.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		KNIGHT PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
52A	7500Ω	3.3Ω	620Ω	.64Ω	22E7*	A-3878	T-22847		
52B					22E9				

*Used in Underwriters approved model only.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			KNIGHT PART No.	JENSEN PART No.		
53	FIELD	VC IMP.	1E12	ST-105		
	PM	3.3Ω		Mod. P5-V		
54	CONE DIA.	VC DIA.	SPEAKER CONE HAS SPECIAL ADJUSTMENT FEATURE-ORDER FROM MANUFACTURER.			
	4-3/4"	1/2"				

R F COILS

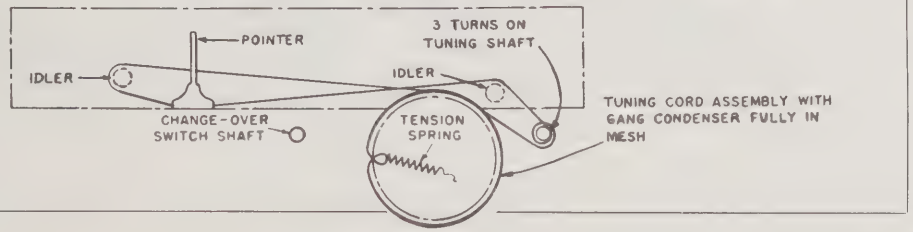
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	KNIGHT PART No.	MEISSNER PART No.	
55A	Loop Ant.			20E82		Honey Comb. Type Used in Some Sets.
B	" "	0Ω	.5Ω	20E160-1		Flat Wound Type Used in Other Sets
56	Wave Trap	55Ω		2E19		
57	Osc. Coil	1.5Ω	5.5Ω	20E52	14-1040	
58	Input IF	14.5Ω	13.8Ω	20E53	16-6666	
59	Output IF	13Ω	13.5Ω	20E54	16-6667	

DIAL LIGHT

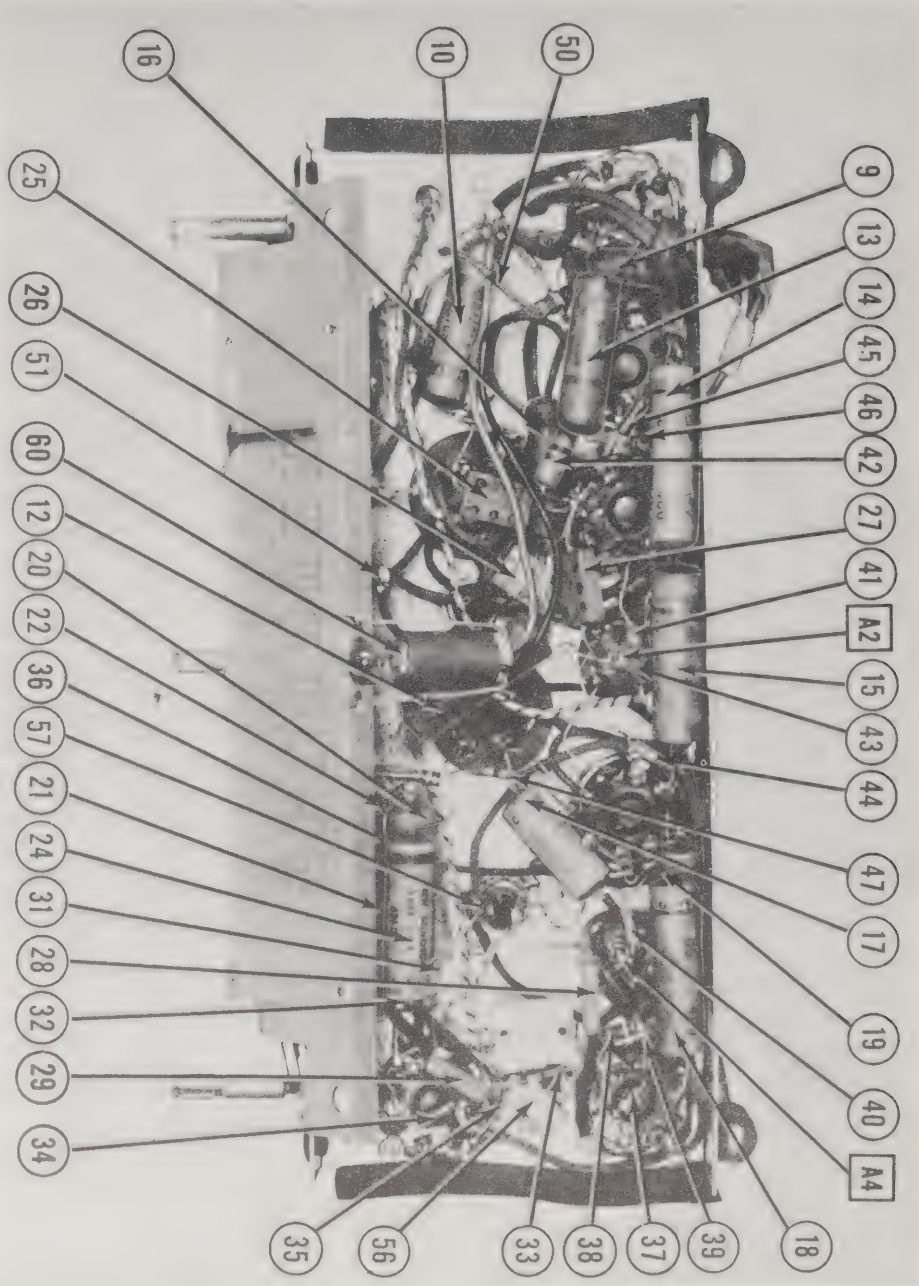
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					KNIGHT PART No.		
60	Bayonet	6-8	0.15	Brown	40E2		Type 47

MISCELLANEOUS

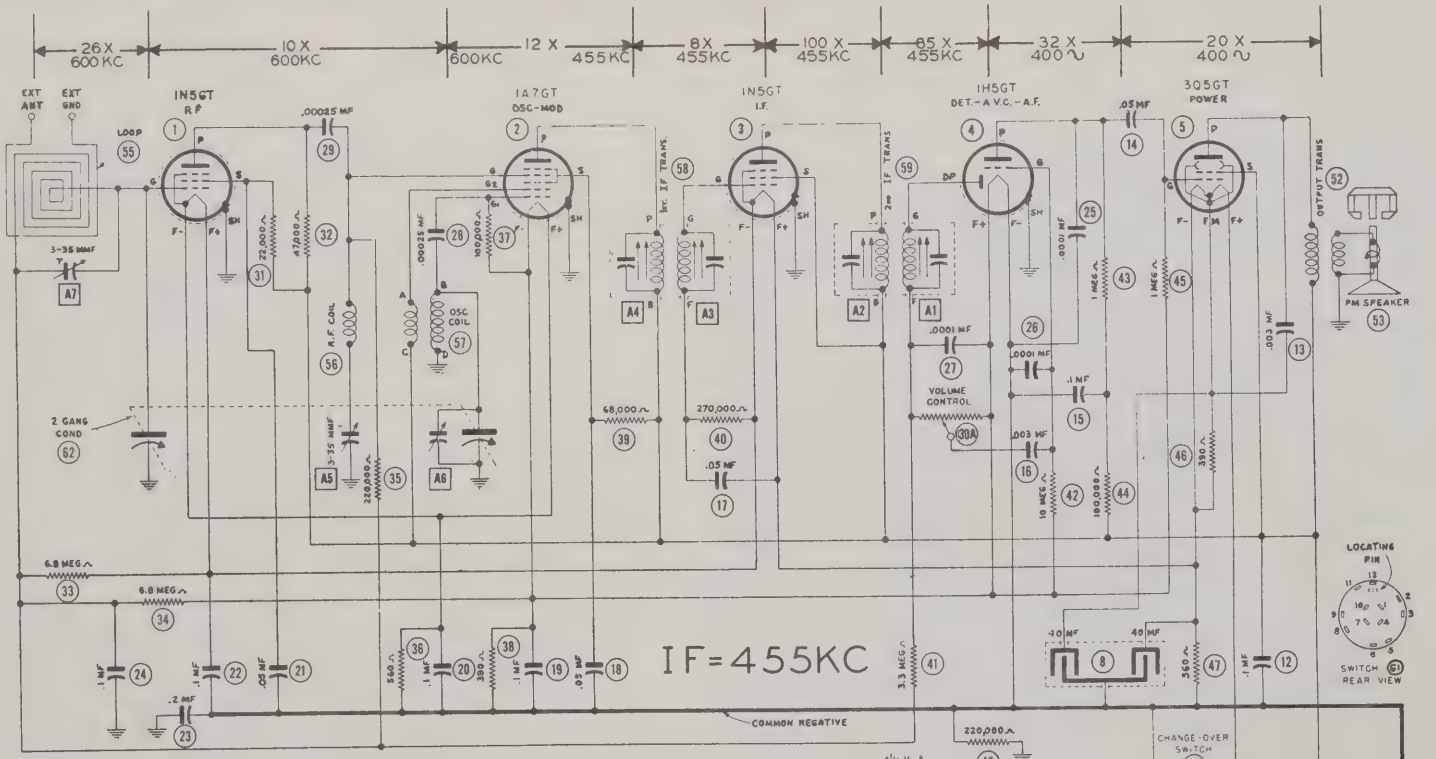
ITEM No.	PART NAME	KNIGHT PART No.	NOTES
61	Switch	29E5	Power Changeover
62A	Tuning Cap.	24E2 or	2 Gang Var. Cap. 2 Hole Mtg.
B	" "	24E18	" " " " 3 " "
A5	Trimmer Cap.	24E3	Wave Trap Adj. 3-35 MMF
A7	" "	24E3	Ant. Loop Adj. 3-35 MMF
	"A" Battery	38A	or equivalent
	"B" "	3870	" "
	Cabinet	7E99-1	
	Dial Plate Assby	20E78	Dial Back Plate
	Dial Crystal	9EA	Acetate
	Dial Escutcheon	48E1	Plastic
	Dial Scale	36E27-1	
	Dial Pointer	35E10	
	Knob	37E21-15	
	"	37E21-16	"AC-DC-Off-Batt"



CHASSIS—BOTTOM VIEW



KNIGHT MODEL 6A-127



NOTE: VOLT. & RES. READINGS TAKEN WITH CHANGE OVER SWITCH IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	0V	4.4VAC	67V.DC	97V. DC	+05V. DC	+05V. DC	2.8V.AC	0 V	.05V. DC
2	1A7GT	0V	2.8V. AC	100V.DC	45V. DC	0 V	100V. DC	1.37V.AC	0 V	.05V. DC
3	1N5GT	0V	5.8V.AC	100V. DC	100V. DC	95V.DC	0 V	4.4V. AC	0 V	.6V. DC
4	1H5GT	0V	0 V	45V. DC	+05V.DC	+07V. DC	0 V	1.37V.AC	0 V	0 V
5	3Q5GT	0V	8.4V.AC	95V. DC	100V. DC	+05V.DC	0 V	5.8V.AC	7.2 V.AC	
6	117Z6GT	0V	0 V	117V.AC	132V.DC	117V.AC	117V. AC	117V.AC	132V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	0 Ω	*	49K Ω	24K Ω	1.8MEG	2 MEG	*	INF	1.8MEG
2	1A7GT	0 Ω	*	2.3K Ω	70K Ω	100K Ω	2.3K Ω	*	0 Ω	2 MEG
3	1N5GT	0 Ω	*	2.3MEG	2.3K Ω	100K Ω	0 Ω	*	INF	270K Ω
4	1H5GT	0 Ω	*	1.1MEG	1.8MEG	78K Ω	10MEG	*	INF	10 MEG
5	3Q5GT	0 Ω	*	2.3K Ω	23K Ω	1MEG	INF	*	*	
6	117Z6GT	INF	0 Ω	220 Ω	2.3K Ω	220 Ω	220	220 Ω	2.3K Ω	

* DO NOT USE OHMMETER TO CHECK FILAMENT RESISTANCE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITATORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

469-19

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is grounded.

1. DC Voltage measurements are at 20,000 ohms per volt: AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

LEARADIO
MODELS 565, 565BL, 566, 567, 568

LEARADIO
MODELS 565, 565BL, 566, 567, 568

LEARADIO MODEL 567

TRADE NAME	Learadio Models 565, 565BL, 566, 567, 568
MANUFACTURER	Lear, Inc., 110 Ionia Ave., N.W., Grand Rapids, Michigan
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12SA7 Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	117 Volts AC-DC
TUNING RANGE--BROADCAST	540-1640KC RATING .240 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn tuning control fully clockwise and set pointer at 1620KC. Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD.	High side to pin #8 of 12SA7. Low side to B-.	455KC	1620KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
200 MMF.	High side to ant. lead. Low side to B-.	1620KC	"	"	A5	Adjust for maximum output.
200 MMF.	"	1500KC	Tune for maximum output.	"	A6	" " " "
200 MMF.	"	600KC	"	"	A7	Rock tuner and adjust for maximum output. Repeat last three steps until no further improvement can be obtained.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: LEARADIO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7	12SA7	8R	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: LEARADIO PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	50	150	52326	M-5030-150	TA-530	PRSA150-40-40	BRD3515	2N520	Filter - Red
B	30	150							" - Green
7	.05	600	56656	S-6-05	TC-15	684-05	DT6S5	TP415	Line Filter
8	.1	400	56631	S-4-1	TC-1	484-.1	DT4P1	TP428	Line Isolation
9	.05	400	56628	S-4-05	TC-15	484-05	DT4S5	TP426	Output Plate Bypass
10	.004	200	56589	S-6-004	TC-24	484-004	DT6D4	TP407	Audio Coupling
11	.02	200	56596	S-4-02	TC-12	484-02	DT4S2	TP423	" "
12	.05	200	56600	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
13	.1	400	56631	S-4-1	TC-1	484-.1	DT4P1	TP428	Screen Bypass
14	220	500	56059	M0.5-32	1FM-32	1468-0002	5W5T2	MC237	Audio Plate Bypass
15	47	500	56055	M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
16	22	500	56053	M0.5-425	MS-42	1468-000025	5W5Q2	MC220	Ant. Coupling
17	22	500	56053	M0.5-425	MS-42	1468-000025	5W5Q2	MC220	" "

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LEARADIO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	1	56340	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 18A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

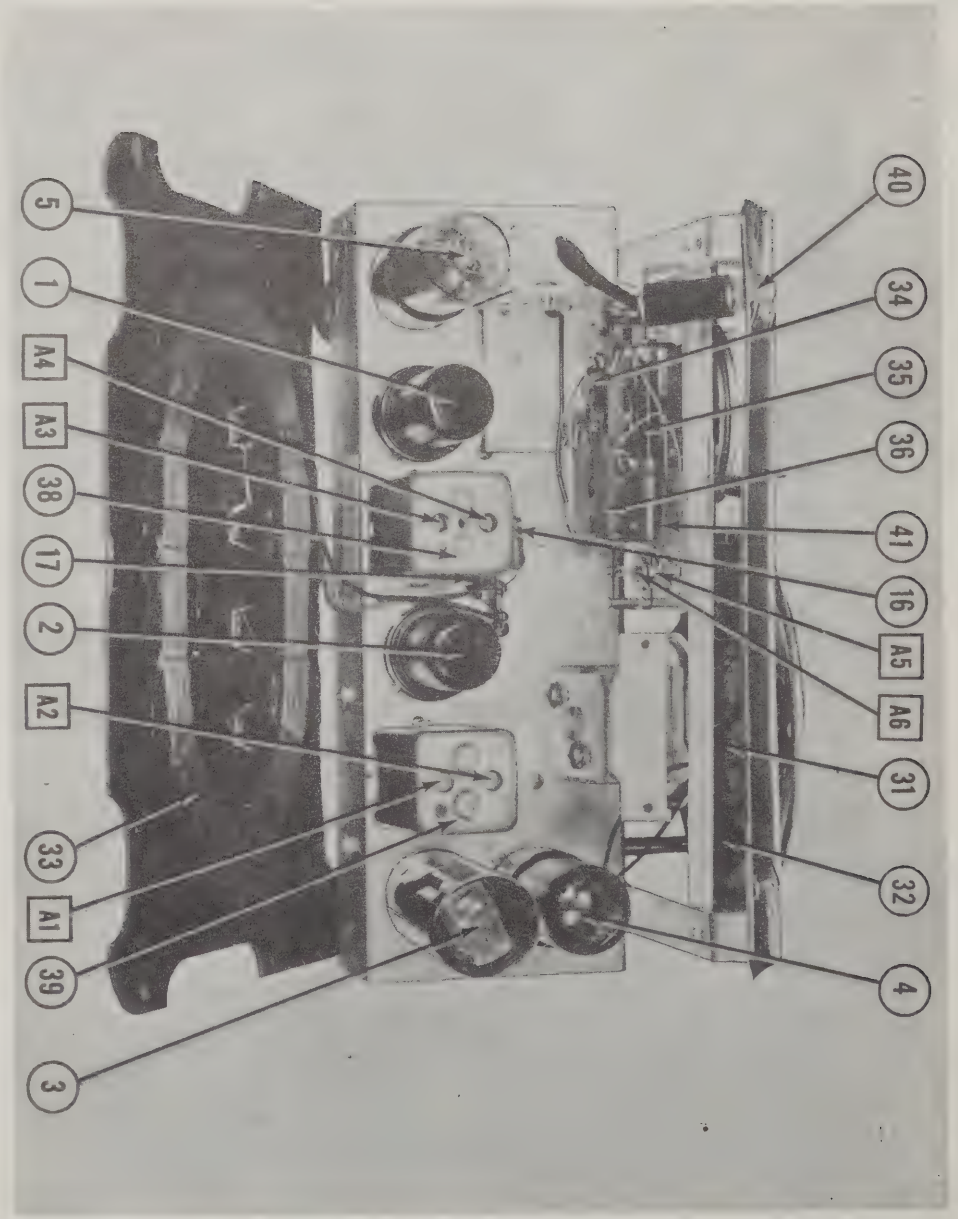
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LEARADIO PART No.	IRC PART No.	IDENTIFICATION CODES
19	15 Meg.	½	55496	BTS-15 Meg.	Br.-Grn.-Blue AVC Network
20	22KΩ	½	55479	BTS-22K	Red-Red-Or. Oscillator Grid
21	220KΩ	½	55485	BTS-220K	Red-Red-Yl. Line Isolating
22	15Ω	½	55460	BW-½-15	Br.-Grn.-Blk. Rectifier Ballast
23	4700Ω	½	55475	BTS-4700	Yl.-Vi.-Red Voltage Dropping
24	2.2 Meg.	½	55491	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
25	2.2 Meg.	½	55491	BTS-2.2 Meg.	Red-Red-Grn. 1st AF Grid
26	470K	½	55487	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
27	470K	½	55487	BTS-470K	Yl.-Vi.-Yl. Output Grid
28	150Ω	½	55466	BW-½-150	Br.-Grn.-Br. Output Cathode
29	1200Ω	1	55674	BTA-1200	Br.-Red-Red Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: LEARADIO PART No.	STANCOR PART No.	THORDAR'N PART No.	INSTALLATION NOTES
30	2000Ω	3.3Ω	190Ω	.6Ω	B52531	A-3876	T-22S45	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA LEARADIO PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-106*		
31	PM	3.35Ω	D53456	Mod. P8-W		*Fabricate new mounting bracket.
	CONE Dia.	VC DIA.				
32	4-12/16"	1/2"	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT.			

R F COILS

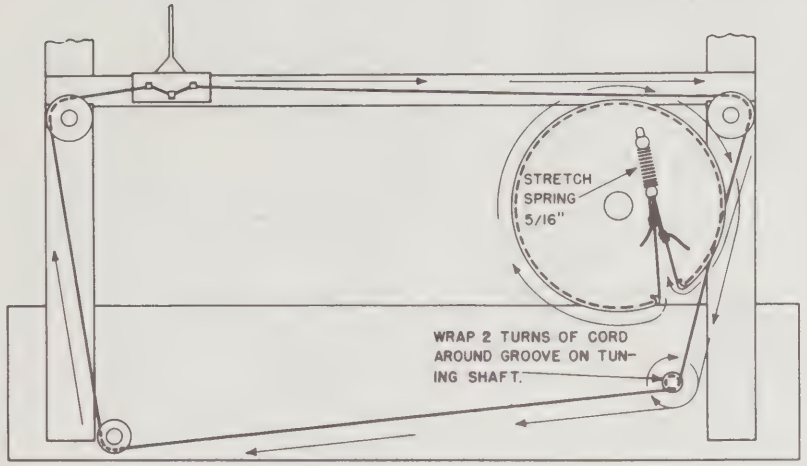
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA LEARADIO PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
33	Loop Ant.	0Ω	.5Ω	52570		
34	Loop Load Coil	2.8Ω		53385		
35	Ant. Coil		11Ω			Items 35 & 36 ganged together and slug tuned. May be obtained as complete unit under Part No. 54284
36	Osc. Coil		4.5Ω			
37	Osc. Padder	1Ω	4.5Ω	54282		
38	Input IF	21Ω	20Ω	53356	16-6658	
39	Output IF	14Ω		53361	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA LEARADIO PART No.	REPLACEMENT DATA	INSTALLATION NOTES
40	Bayonet	6-8	0.15	Brown	70535		Type 47

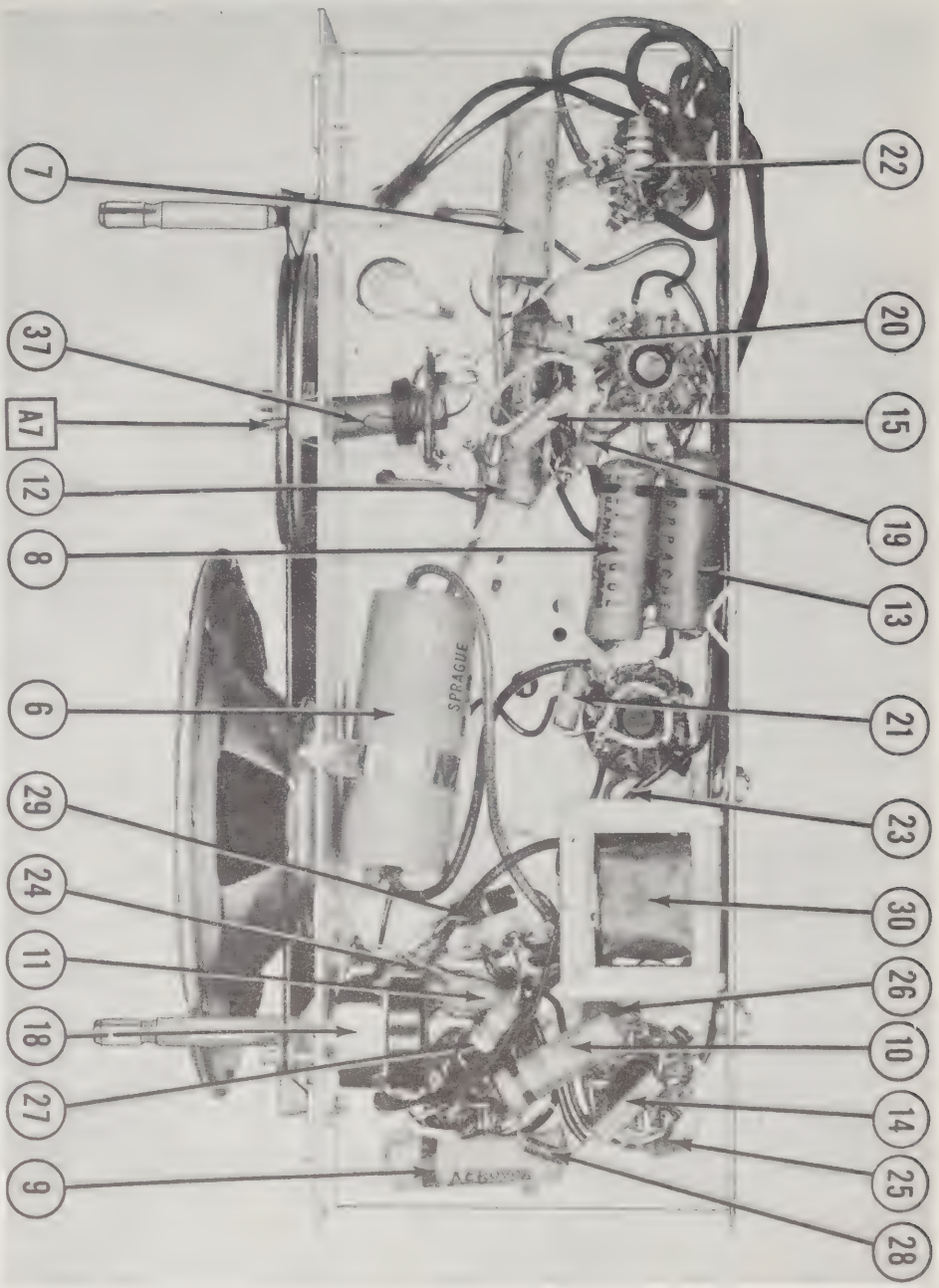
MISCELLANEOUS

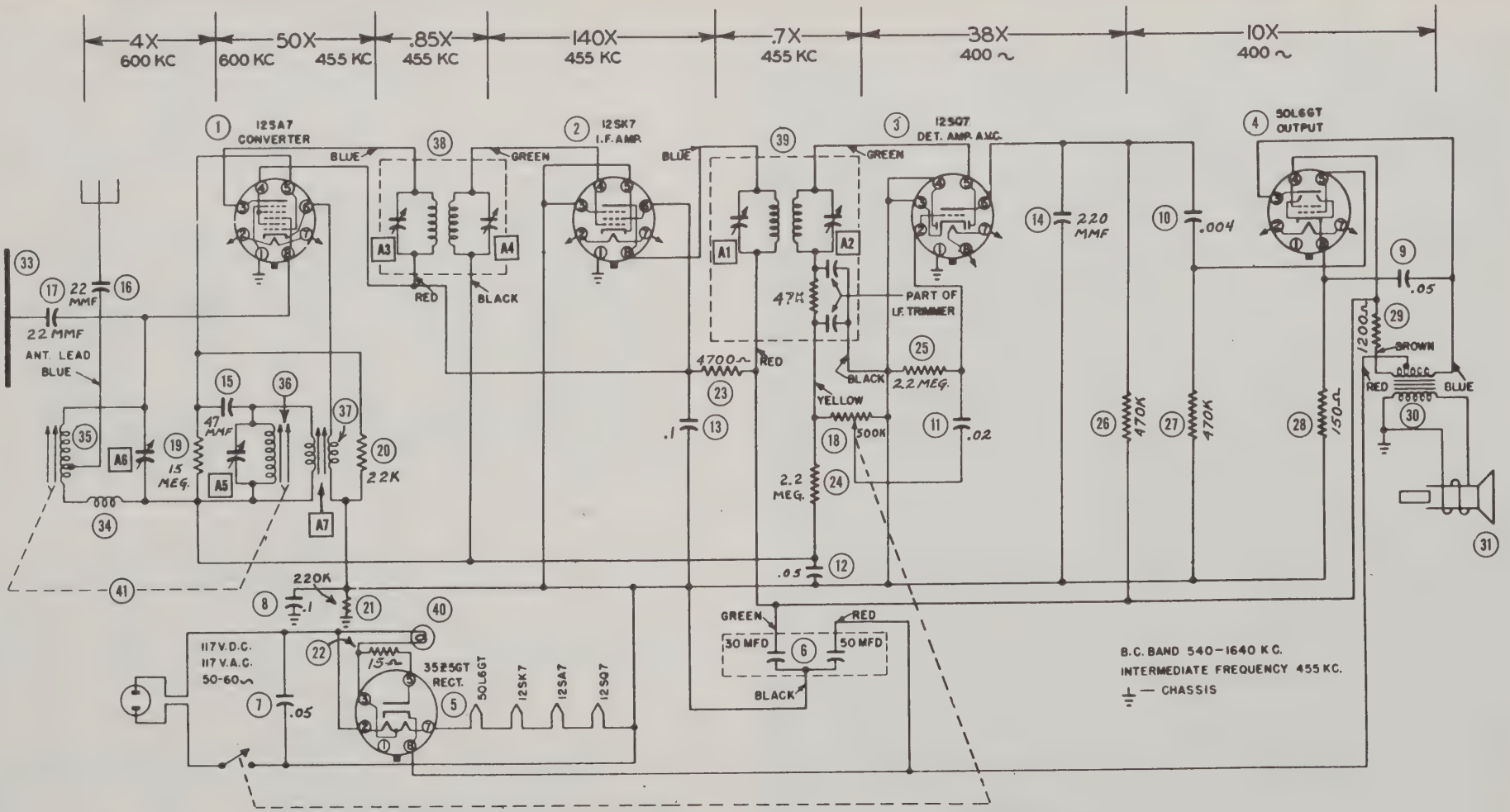
ITEM No.	PART NAME	LEARADIO PART No.	NOTES
41	Tuner Assby.	54264	



DIAL DRIVE DIAGRAM

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	0V.	24 V.AC	58V.DC	58V.DC	–4V.DC	0V.	13V.AC	–35V.DC
2	12SK7	0V.	36.5V.AC	0V.	–35V.DC	0V.	58V.DC	24 V.AC	97 V.DC
3	12SQ7GT	0V.	–5V.DC	0V.	0V.	–5V.DC	49V.DC	13V.AC	0V.
4	50L6GT	0V.	85V.AC	112V.DC	97V.DC	0V.	–35V.DC	36.5V.AC	5.8V.DC
5	35Z5GT	0V.	117 V.AC	113V.AC	0V.	112V.AC	0V.	85V.AC	118V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7	170KΩ	22Ω	105KΩ	105KΩ	19KΩ	1Ω	12Ω	1.9MEG.
2	12SK7	170KΩ	34Ω	0Ω	1.9MEG.	0Ω	105KΩ	22Ω	100KΩ
3	12SQ7GT	170KΩ	1.9MEG.	0Ω	0Ω	480KΩ	570KΩ	12Ω	0Ω
4	50L6GT	INF.	73Ω	100KΩ	100KΩ	400KΩ	1.9MEG.	34Ω	120Ω
5	35Z5GT	INF.	100Ω	97Ω	INF.	113Ω	0Ω	73Ω	100KΩ

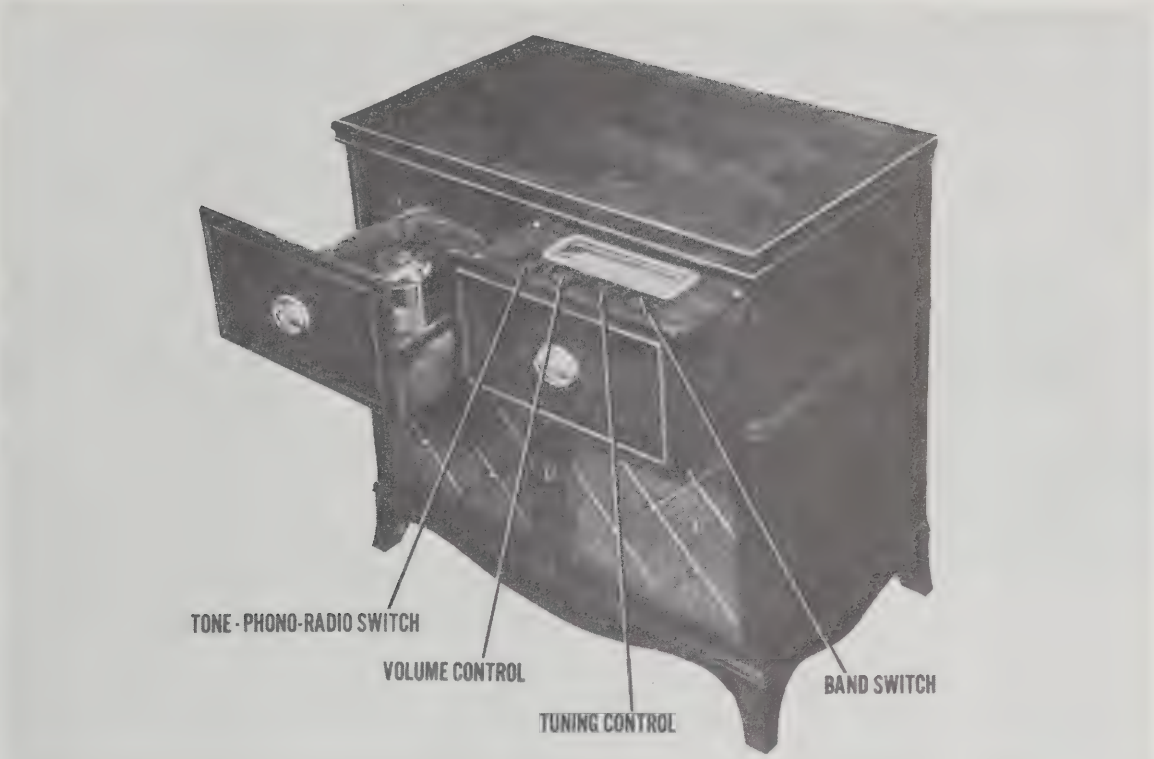
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-20

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



LEARADIO
MODELS 6610PC, 6611PC, 6612PC

LEARADIO
MODELS 6610PC, 6611PC, 6612PC

LEARADIO MODEL 6611PC

TRADE NAME	Learadio Models 6610PC, 6611PC, 6612PC
MANUFACTURER	Lear, Inc., 110 Ionia Ave., N. W. Grand Rapids, Mich.
TYPE SET	AC Operated Combination Automatic Phono. - 3 Band Superheterodyne Receiver With Self Contained Loop Antenna
TUBES (SIX)	Types, 6SK7 RF Amp., 6SA7 Converter, 6SF7 IF Amp.-Det.-AVC, 6SJ7 1st Audio, 6V6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	117 Volts AC RATING .450 Amps. @ 117V AC
TUNING RANGE—BROADCAST	535-1730KC SHORT WAVE 1.68-5.35 MC, 5.45-18.34C

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at the last reference mark at the left end of the dial. Set volume control at maximum volume and keep output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.05 MFD.	High side to pin #8 (signal grid) of 6SA7. Low side to chassis.	455KC	BC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output
400 OHMS	High side to ext. ant. lead. Low side to chassis.	18.0MC	SW-2	18.0MC	"	A5	"
400 OHMS	"	15.0MC	"	Tune for maximum output.	"	A6,A7.	Rock variable and adjust for maximum output.
400 OHMS	"	5.6MC	SW-1	5.6MC	"	A8	Adjust for maximum output
400 OHMS	"	5.0MC	"	Tune for maximum output.	"	A9,A10	Rock variable and adjust for maximum output.
200 MMF.	"	1700KC	BC	1700KC	"	A11	Adjust for maximum output
200 MMF.	"	1500KC	"	Tune for maximum output.	"	A12,A13	"
200 MMF.	"	600KC	"	"	"	A14	Rock variable and adjust for maximum output. Repeat last three steps until no further improvement can be obtained.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: LEARADIO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp.-Det-AVC	6SF7	6SF7	7AZ	
4	1st Audio	6SJ7	6SJ7	8N	
5	Pwr. Output	6V6GT	6V6GT	7AC	
6	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: LEARADIO PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	10	350	B53939	DY-312	EL-212	AF32K4A	UP6CJ17	FP339	▲ Filter
B	20	350							■ "
C	20	25							Cath. Bypass
8	8	250	A54146	M-8-250	UT-82	PRS250-8	BR825	TC52	Filter
9	.05	400	C56628	S-4-05	TC-15	484-05	DT4S5	TP426	Line Bypass
10	.05	400	C56628	S-4-05	TC-15	484-05	DT4S5	TP426	" "
11	.02	400	C56624	S-4-02	TC-12	484-02	DT4S2	TP423	Audio Coupling
12	.001	400	C56613	S-6-001	TC-21	484-001	DT6D1	TP404	Audio Plate Bypass
13	.05	400	C56628	S-4-05	TC-15	484-05	DT4S5	TP426	Audio Screen Bypass
14	.01	400	C56622	S-4-01	TC-11	484-01	DT4S1	TP421	Hum Neutralizing
15	.02	200	C56596	S-4-02	TC-12	484-02	DT4S2	TP423	Audio Coupling
16	.01	200	C56594	S-4-01	TC-11	484-01	DT4S1	TP421	Tone Compensation
17	.05	200	C56600	S-4-05	TC-15	484-05	DT4S5	TP426	" "
18	.02	200	C56596	S-4-02	TC-12	484-02	DT4S2	TP423	AVC Filter
19	.1	400	C56631	S-4-1	TC-1	484-.1	DT4P1	TP428	RF Bypass Pwr. Supp.
20	.02	200	C56596	S-4-02	TC-12	484-02	DT4S2	TP423	AVC Filter
21	1250	500	A50235						Fixed Padder
22	3900	500	A51931						" "
23	47	500	B56056	MO.5-45	1FM-45	1468-00005	5W5Q2	MC225	Fixed Trimmer
24	22	500	B56053	MO.5-425	MS-42	1468-000025	5W5Q2	MC220	Loop Pri. Shunt

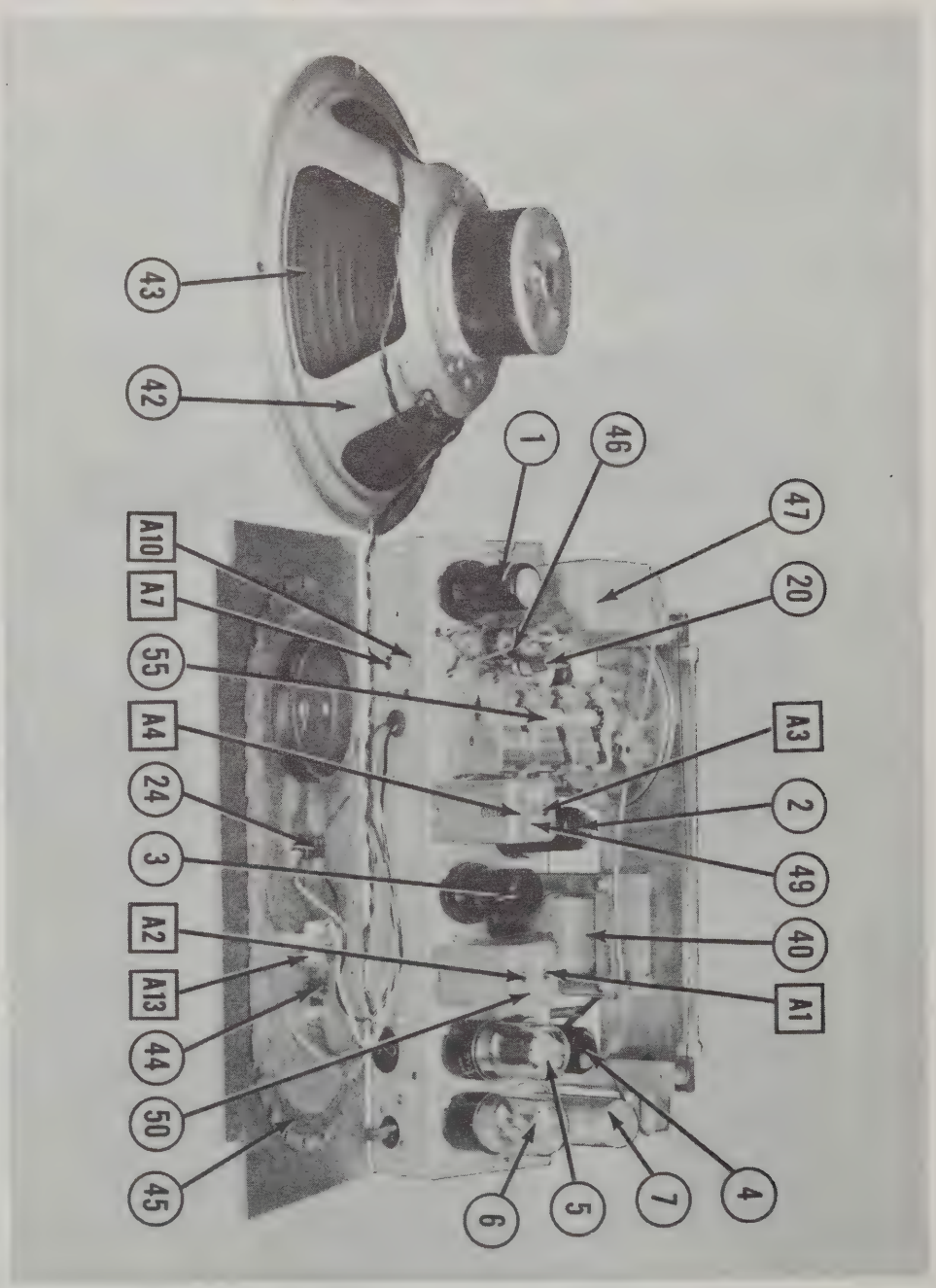
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LEARADIO PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
25A	500KΩ	1	D56340	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 25A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: LEARADIO PART No.	IRC PART No.	IDENTIFICATION CODES
26	220KΩ	½	B55485	BTS-220K	Red-Red-Yl. AVC Network
27	15 Meg.	½	B55496	BTS-15 Meg.	Br.-Grn.-Blue " "
28	22KΩ	½	B55479	BTS-22K	Red-Red-Or. Oscillator Grid
29	12KΩ	2	B55952	BT-2-12K	Br.-Red-Or. Screen Dropping
30	2.2 Meg.	½	B55491	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
31	1500Ω	½	B55472	BTS-1500	Br.-Grn.-Red 1st AF Cathode
32	2.2 Meg.	½	B55491	BTS-2.2 Meg.	Red-Red-Grn. " " Screen Dropping
33	470KΩ	½	B55487	BTS-470K	Yl.-Vi.-Yl. " " Plate Load
34	2.2 Meg.	½	B55491	BTS-2.2 Meg.	Red-Red-Grn. " " Grid
35	470KΩ	½	B55487	BTS-470K	Yl.-Vi.-Yl. Output "
36	220Ω	1	B55733	BW-1-220	Red-Red-Br. " Cathode
37	47KΩ	½	B55481	BTS-47K	Yl.-Vi.-Or. Tone Compensation
38	15KΩ	½	B55478	BTS-15K	Br.-Grn.-Or. " "
39	1200Ω	2	B55940	BT-2-1200	Br.-Red-Red Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	LEARADIO PART No.	STANCOR PART No.	THORDARSON PART No.	
40	117V AC @.450A	520V CT @.072A	6.4V AC @2.25A		B53942		T22R31 *	* Bend mounting tabs down on one side.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		LEARADIO PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
41	3800Ω	8.8Ω	225Ω	.8Ω	B53941	A-3856 +	T22S4 +		+ Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			LEARADIO PART No.	JENSEN PART No.		
42	FIELD	VC IMP.		ST-120		
	PM	5.8Ω	B53933	Mod.P10-S		
43	CONE DIA.	VC DIA.				
	10"	15/16"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

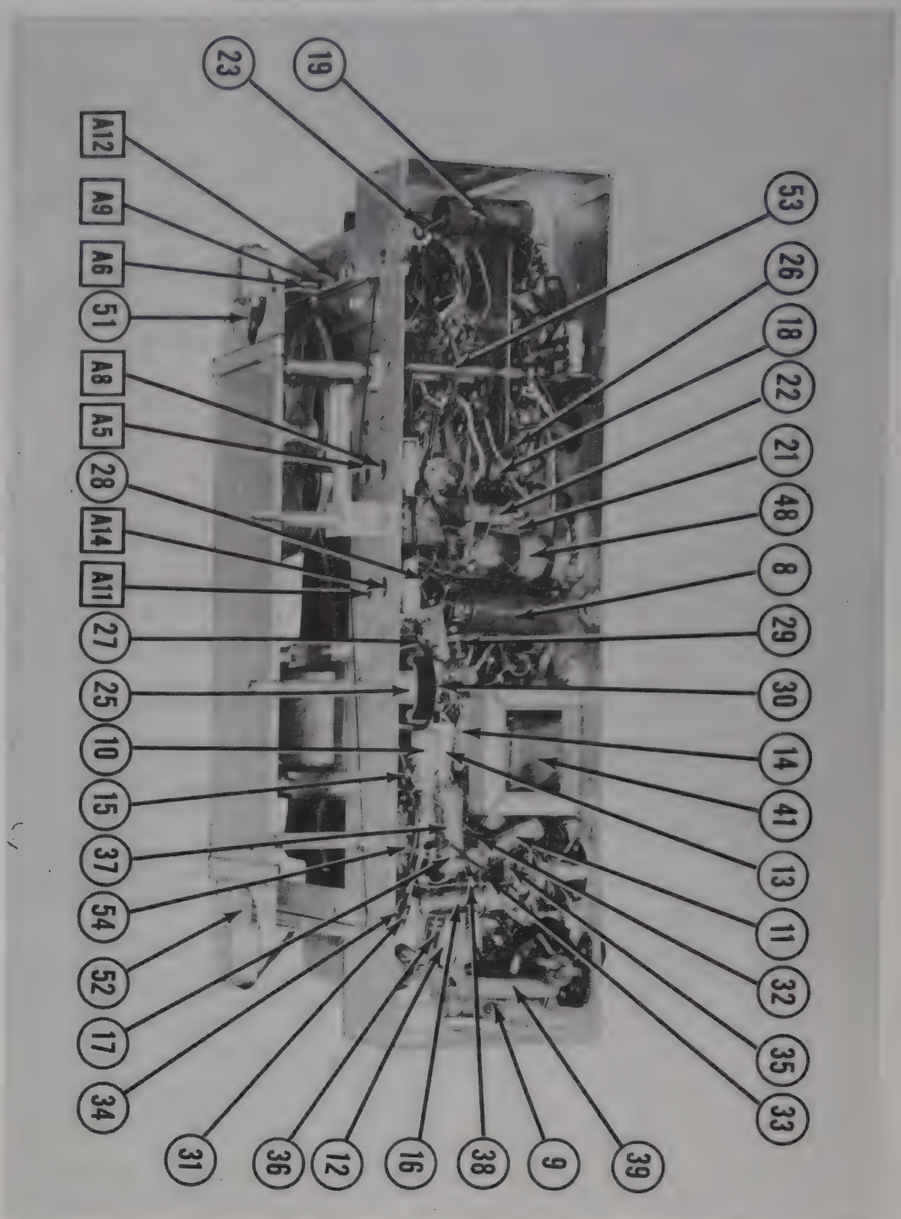
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	LEARADIO PART No.	MEISSNER PART No.	
44	Loop Load	2.8Ω		B53385		
45	Ant. Loop	70Ω	1Ω	54448		
46A	SW Ant. Coil #2	0Ω	2.5Ω	B65025		Items 46A, 46B wound on same form.
46B	SW Ant. Coil #3	.3Ω	.2Ω	"		
47A	RF Coil #1	46Ω	9Ω	B65026		Items 47A, 47B, 47C wound on same form.
47B	RF Coil #2	0Ω	3Ω	"		
47C	RF Coil #3	6Ω	0Ω	"		
48A	Osc. Coil #1	.9Ω	5.3Ω	B65022		Items 48A, 48B, 48C wound on same form.
48B	Osc. Coil #2	.8Ω	2.5Ω	"		
48C	Osc. Coil #3	.5Ω	.3Ω	"		
49	Input IF	21Ω	20Ω	53350	16-6658	
50	Output IF	18.5Ω		54990	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					LEARADIO PART No.		
51	Bayonet	6-8	0.15	Brown	70535		Type 47
52	Bayonet	6-8	0.15	Brown	70535		Type 47

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	LEARADIO PART No.	NOTES
53	Band Switch	B52646	
54	Switch	A53940	Radio-Phono & Tone
55	Tuning Cap.	B52642	3 Gang Variable
A5	Trimmer Cap.	A52664	#2 SW Osc. Adj.
A8			#1 " " "
A6	Trimmer Cap.	A52644	#2 SW RF Adj.
A9			#1 " " "
A12			BC RF Ant.
A7	Trimmer Cap.	A52664	#2 SW Ant. Adj.
A10			#1 SW Ant. Adj.
A11	Trimmer Cap.	A52665	BC Osc. Adj.
A14	Padder Cap.		BC Osc. Pad.
A13	Trimmer Cap.	A52686	BC Ant. Adj.

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove screw and clamp holding speaker, phono-pickup and phono-motor cables.
3. Remove two screws holding loop antenna.
4. Loosen two bolts holding chassis. Slide chassis out rear.
5. Remove phono-motor and pickup plugs.
6. Unsolder phono-motor leads from chassis.
7. Remove four screws holding speaker. Remove speaker.

The following instructions must be carefully observed for quick and accurate installation of chassis in cabinet.

1. Loosen drawer stop allowing drawer to slide forward.
2. Remove wood screws holding top control panel to drawer.
3. Now proceed to reassemble in the reverse order of the above disassembly instructions.

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION.

VOLTAGE READINGS

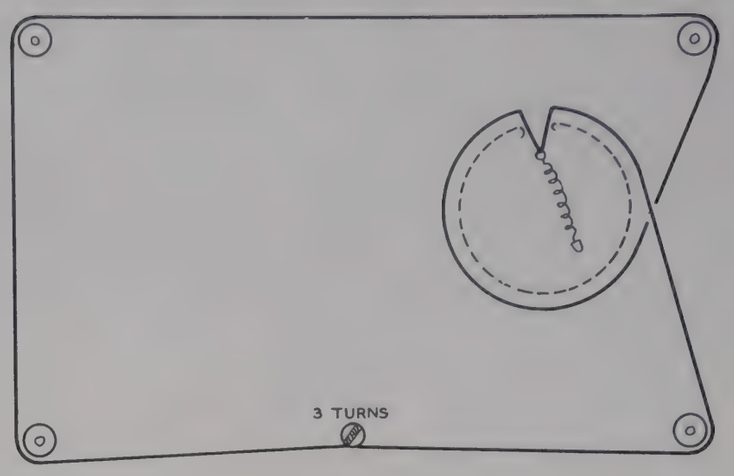
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0V.	0V.	0V.	-.55V.DC	0V.	82V.DC	6.4V.AC	230V.DC
2	6SA7	0V.	0V.	230V.DC	82V.DC	-3.6V.DC	0V.	6.4V.AC	-45V.DC
3	6SF7	0V.	-.45V.DC	0V.	82V.DC	-.5V.DC	230V.DC	0V.	6.4V.AC
4	6SJ7	0V.	0V.	.6V.DC	0V.	.6V.DC	16V.DC	6.4V.AC	77V.DC
5	6V6GT	0V.	0V.	265V.DC	230V.DC	0V.	0V.	6.4V.AC	11V.DC
6	6X5GT	0V.	0V.	260V.AC	49.5V.AC	260V.AC	49.5V.AC	6.4V.AC	275V.DC

RESISTANCE READINGS

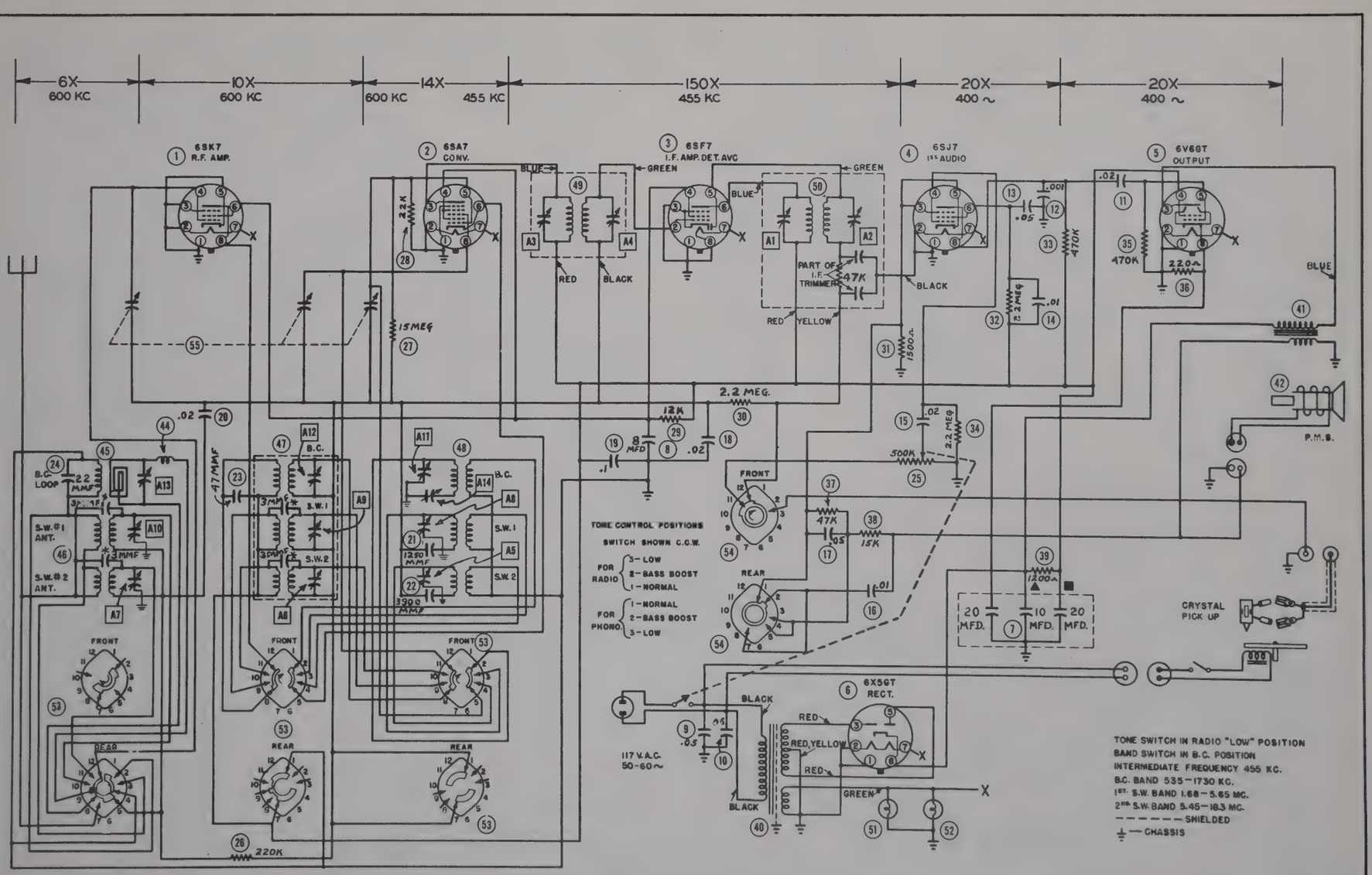
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7	0Ω	0Ω	0Ω	1.5 MEG.	0Ω	212KΩ	.2Ω	200KΩ
2	6SA7	0Ω	0Ω	200KΩ	212KΩ	19KΩ	.5Ω	.2Ω	1.5 MEG.
3	6SF7	0Ω	1.5 MEG.	0Ω	212KΩ	1.5MEG.	200KΩ	0Ω	.2Ω
4	6SJ7	0Ω	0Ω	1100Ω	1.9MEG.	1100Ω	2.4MEG.	.2Ω	670KΩ
5	6V6GT	0Ω	0Ω	200KΩ	200KΩ	360KΩ	INF.	.2Ω	230Ω
6	6X5GT	0Ω	0Ω	180Ω	INF.	190Ω	INF.	.2Ω	200KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



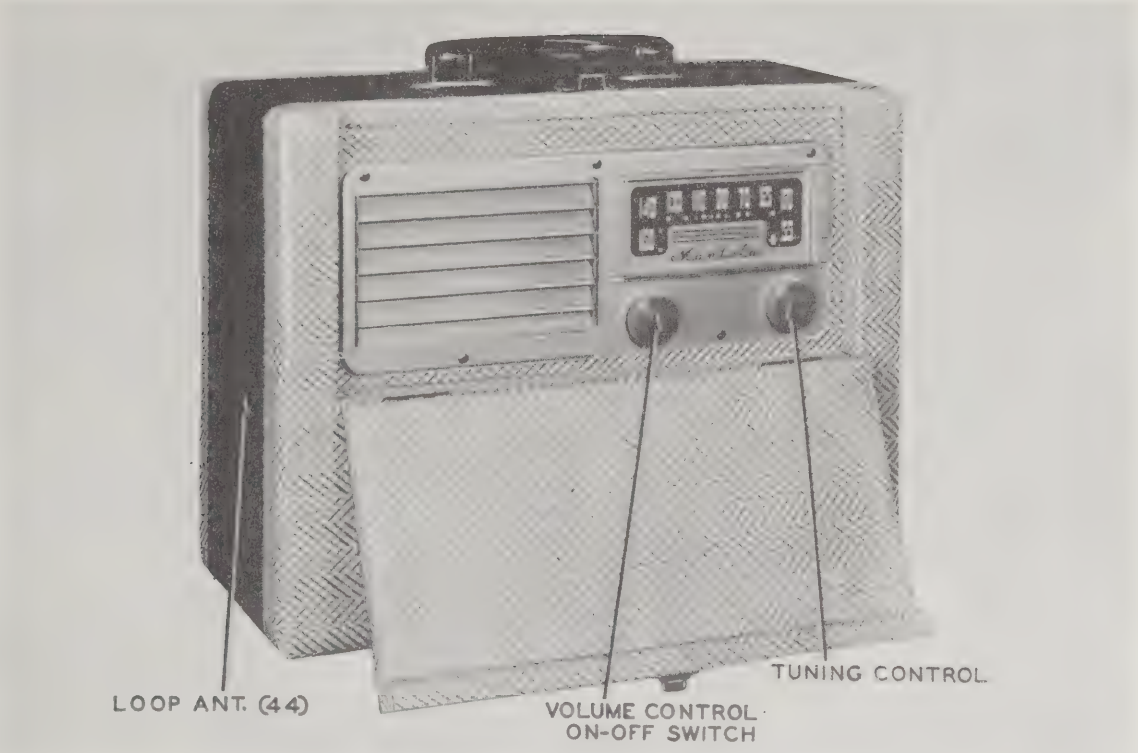
DIAL CORD DRIVE



*GIMMICK

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE 469-21

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.



MANTOLA
MODEL R-652, 652N

MANTOLA
MODEL R-652, 652N

MANTOLA MODEL R652

TRADE NAME	Mantola Models R652, R652N
SUPPLIER	The B. F. Goodrich Co., 500 S. Main St., Akron, Ohio
TYPE SET	Three Power Portable-AC-DC Battery Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 1N5GT RF Amp., 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output.
POWER SUPPLY	105-125 Volts AC-DC or 9 Volt "A" Supply & 90 Volt "B" Supply in Battery Pack Form
RATING	.155 Amps. @ 117V AC - 56 MA @ 9V DC & 13MA @ 90V DC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS

Use battery whenever possible when aligning. Disconnect loop and remove chassis from cabinet. Connect 50K carbon resistor across two clips from which loop was removed. Turn volume control to full volume and adjust output of signal generator no higher than is necessary to obtain output reading.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid cap. of 1A7. Low side to B-.	455KC	Any point of no interfering signal.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If receiver is connected to AC power use isolation transformer or connect isolating cap. between generator ground lead and B- and decrease dummy ant. to .00025 MFD.
.1 MFD.	High side to grid cap of 1N5. Low side to B-.	1620KC	Rotor full open. (Plates out of mesh)	"	A5	"
.1 MFD.	"	1400KC	Tune In 1400 KC signal.	"	A6	"
Replace Set In Cabinet And Connect Loop Ant.						
.00025 MFD.	High side to ant. lead. Low side to ground lead.	1400KC	Tune In 1400 KC signal.	Across voice coil	A7	Adjust for maximum output.
Disregard Next Two Adjustments If Set Being Aligned Is A Model With A Fixed Loop Loading Coil						
.00025 MFD.	High side to ant. lead. Low side to ground lead.	600KC	Tune In 600KC signal.	Across voice coil	A8	Adjust for maximum output.
.00025 MFD.	"	1400KC	Tune In 1400 KC signal.	"	A7	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MANTOLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MANTOLA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	30	150	67C7-42	DY-304	EL-351	AF84D20A	UP6CJ62	FP309	■ Filter
B	50	150							▲ "
C	100	25							"
7	.05	400	64B1-22	S-4-05	TC-15	484-.05	DT4S5	TP426	Line Filter
8	.2	400	64A2-1	S-4-2	TC-2	484-.2	DT4P2	TP429	Line Isolating
9	.002	600	64B1-14	S-6-002	TC-22	684-.002	DT6D2	TP405	3Q5 Plate Bypass
10	.01	400	64B1-25	S-4-01	TC-11	484-.01	DT4S1	TP421	Audio Coupling
11	.01	400	64B1-25	S-4-01	TC-11	484-.01	DT4S1	TP421	" "
12	.01	400	64B1-25	S-4-01	TC-11	484-.01	DT4S1	TP421	AVC Filter
13	.01	400	64B1-25	S-4-01	TC-11	484-.01	DT4S1	TP421	" "
14	.01	400	64B1-25	S-4-01	TC-11	484-.01	DT4S1	TP421	1A7 Screen
15	.25	200	64B1-28	S-4-25	TC-2	484-.25	DT4P25	TP430	Filament Bypass
16	.05	200	64B1-32	S-4-05	TC-15	484-.05	DT4S5	TP426	AVC Filter
17	250	500	65B5-22	MO.5-325	1FM-325	1468-.00025	5W5T25	MC240	Audio Plate Bypass
18	~~250~~	500	65B5-3						Fixed Trimmer
19	50	500	65B5-11	MO.5-325	1FM-45	1468-.00005	5W5Q5	MC225	Osc. Grid Cond.
20	250	500	65B5-22	MO.5-325	1FM-325	1468-.00025	5W5T25	MC240	RF Coupling
21	420	500	65B1-9	MOS.5-34	MS-34	1469-.0004	5W5T4	MCB243	Fixed Trimmer
53	250	500		MO.5-325	1FM-325	1468-.00025	5W5T25	MC240	RF Coupling*
54	100	500		MO.5-31	1FM-31	1468-.0001	5W5T1		IF Bypass Vol. Cont.*

*Not used in all models.

CONTROLS

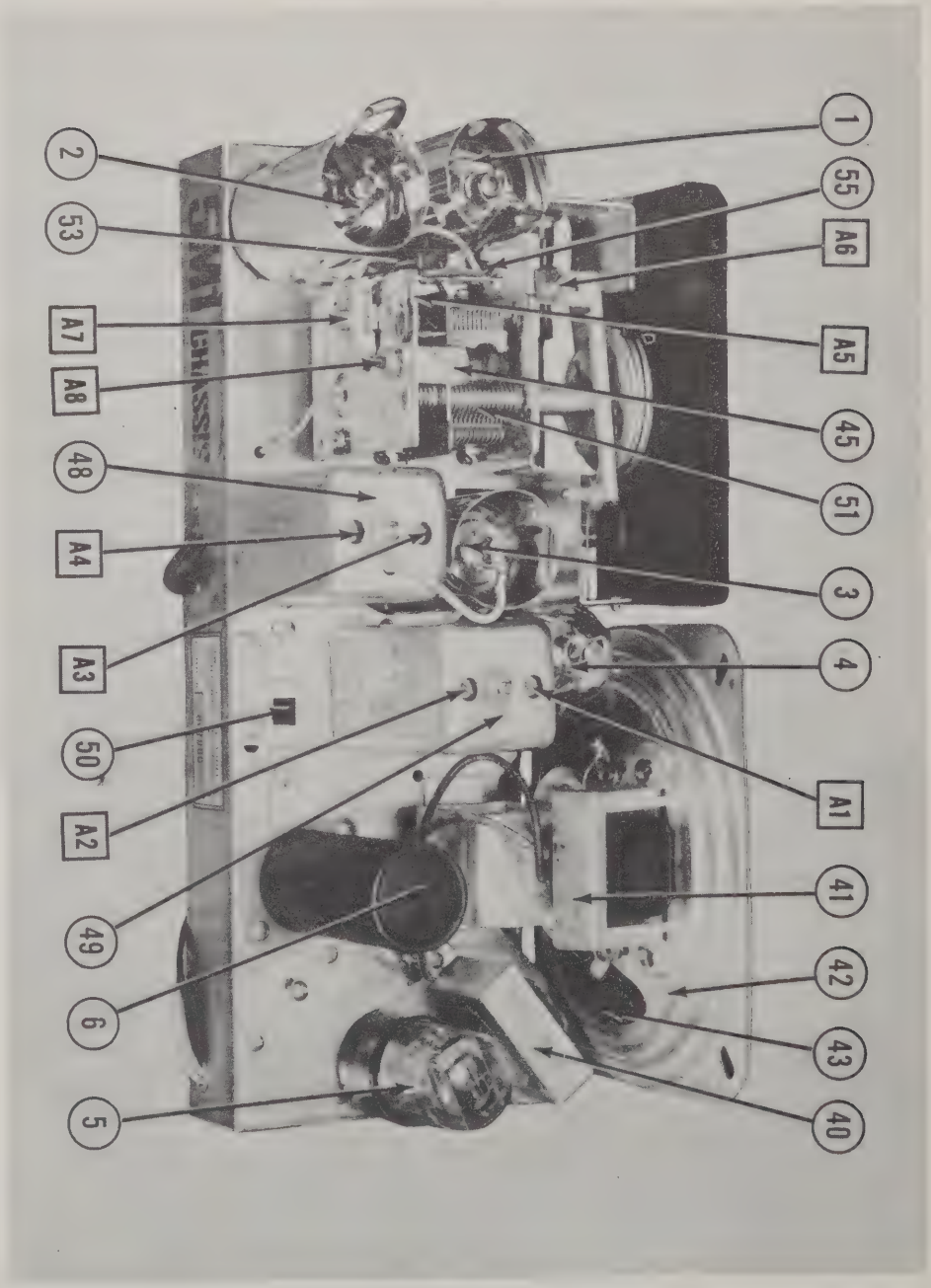
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MANTOLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
22A	1 Meg.	1	75B1-10C	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 22A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MANTOLA PART No.	IRC PART No.	IDENTIFICATION CODES
23	100KΩ	½	60B8-104	BTS-100K	Br.-Blk.-Yl. AVC Network
24	220KΩ	½	60B8-224	BTS-220K	Red-Red-Yl. Osc. Grid
25	47KΩ	½	60B8-473	BTS-47K	Yl.-Vi.-Or. Osc. Screen Dropping
26	4.7 Meg.	¼	60B2-475	BTS-4.7 Meg.	Yl.-Vi.-Grn. AVC Network
27	4.7 Meg.	¼	60B2-475	BTS-4.7 Meg.	Yl.-Vi.-Grn. " "
28	4.7 Meg.	¼	60B2-475	BTS-4.7 Meg.	Yl.-Vi.-Grn. " "
29	3.3 Meg.	¼	60B2-335	BTS-3.3 Meg.	Or.-Or.-Grn. " "
30	15 Meg.	¼	60B2-156	BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
31	1 Meg.	¼	60B2-105	BTS-1 Meg.	Br.-Blk.-Grn. 1st AF Plate Load
32	2.2 Meg.	¼	60B2-225	BTS-2.2 Meg.	Red-Red-Grn. Output Grid
33	2275Ω	5	61A3-6	AB-2250	Filament Dropping
34	47Ω	1		BW-1-47	Yl.-Vi.-Blk. Surge Limiter
35	1500Ω	½	60B8-152	BTS-1500	Br.-Grn.-Red Filament Shunt
36	560Ω	½	60B8-561	BTS-560	Grn.-Blue-Br. Filament Shunt
37	220Ω	½	60B8-221	BW-½-220	Red-Red-Br. Filament Shunt
38	120Ω	½	60B8-121	BW-½-120	Br.-Red-Br. Filament Shunt
39	33KΩ	½		BTS-33K	Or.-Or.-Or. Filament Dropping & Shunt
55	1 Meg.	½	60B-105	BTS-1 Meg.	Br.-Blk.-Grn. RF Grid-See Note 1

Note 1-Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000~)	REPLACEMENT DATA: MANTOLA PART NO.	REPLACEMENT DATA: STANCOR PART NO.	REPLACEMENT DATA: THORDARSON PART NO.	INSTALLATION NOTES
40A	.065A	255Ω	5 Henries	74A5	C-1325†	T-14C62†	†Drill new mounting holes.
B	.067A	319Ω	3.6 "	74A1	C-1711	T-20C52	Alternate filter choke

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MANTOLA PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.	INSTALLATION NOTES
41	9650Ω	2Ω	750Ω	.82Ω	Part of 78B8	A-3822‡	T-22547‡	‡Bend mounting tabs down and mount on original bracket. File slots if necessary.

SPEAKER

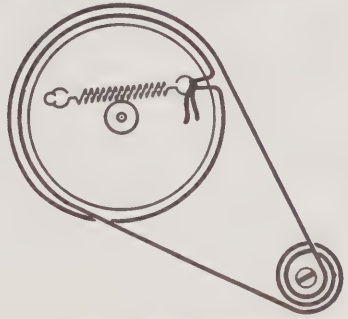
ITEM No.	RATINGS		REPLACEMENT DATA: MANTOLA PART No.	REPLACEMENT DATA: JENSEN PART No.		INSTALLATION NOTES
42	FIELD	VC IMP.	78B8	ST-107 $ Mod. P5-V	$Drill new mounting holes	
	PM	2Ω				
43	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE - USE COMPLETE SPEAKER UNIT.			
	5-1/4"	5/8"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: MANTOLA PART No.	REPLACEMENT DATA: MEISSNER PART No.	INSTALLATION NOTES
44	Loop Ant.	0Ω	.8Ω			
45	Ant. Load Coil	2.5Ω		AA115		Some models use fixed coil #AA114
46	RF Coil	3.8Ω		AB100-5		Slug for AB100-5 is #71B1-3
47	Osc. Coil	2.5Ω	6Ω	69A7	14-1040	
48	Input IF	15Ω	15Ω	72B9-2	16-6658	
49	Output IF	16Ω	16Ω	72B10-2	16-6670	

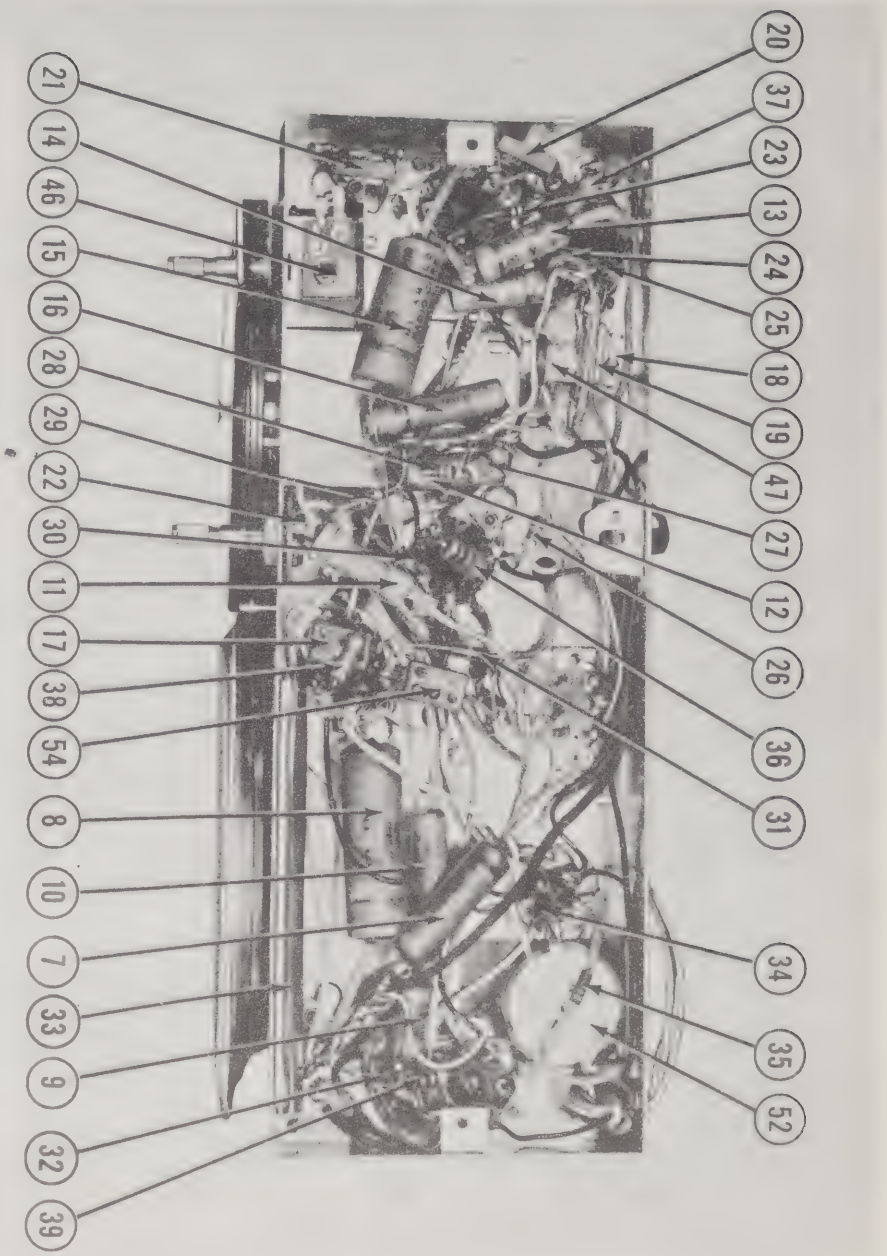
MISCELLANEOUS

ITEM No.	PART NAME	MANTOLA PART No.	NOTES
50A	Switch	77A6	Power Change (Model R652)
B	"	77A10	" " (" R652N)
51	Tuning Cap.	68B4	2 Gang Variable Cap.
A7	Trimmer Cap.	66A12-5	Ant. Adj.
52	Rectifier	93A1-2	Selenium
	Dial Scale	23C14	with Escutcheon
	Knob	33A14-6	"Tuning"
	"	33A14-5	"Volume"
	Plug	88A3-3	Battery (9 Prong)
	Pointer	25A15-1	Cream Tenite



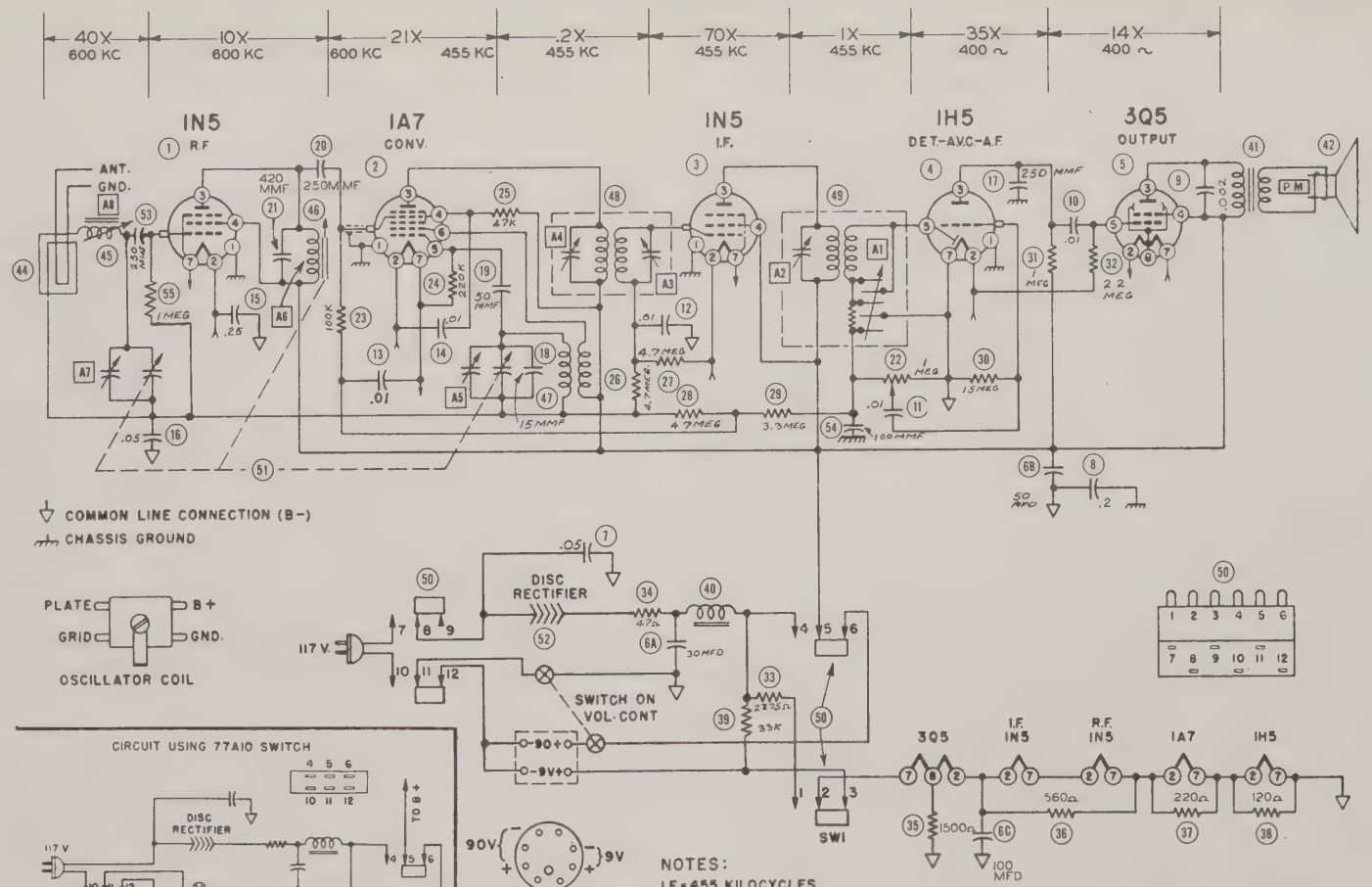
DIAL CORD STRINGING

CHASSIS—BOTTOM VIEW



MANTOLA MODELS R-652, R-652N

MANTOLA MODELS R-652, R-652N



NOTES:
I.F. = 455 KILOCYCLES
POWER CHANGE SWITCH ((50)) SHOWN IN BATTERY OPERATING POSITION.
IN SOME MODELS LOOP LOADING COIL ((45)) WAS FIXED.

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	0V.	4V.DC	108V.DC	108V.DC	0V.	0V.	2.6V.DC	0V.	.1V.DC
2	1A7GT	0V.	2.6V.DC	108V.DC	63V.DC	25V.DC	108V.DC	1.4V.DC	0V.	0V.
3	1N5GT	0V.	5.2V.DC	108V.DC	108V.DC	0V.	2.6V.DC	4V.DC	0V.	.2V.DC
4	1H5GT	0V.	1.4V.DC	73V.DC	-1V.DC	-.1V.DC	0V.	0V.	0V.	0V.
5	3Q5GT	0V.	5.2V.DC	105V.DC	108V.DC	.1V.DC	0V.	7.8V.DC	6.5V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1N5GT	INF.	*	2KΩ	2KΩ	INF.	3MEG.	*	INF.	5MEG.
2	1A7GT	INF.	*	2KΩ	49KΩ	200KΩ	2KΩ	*	3MEG.	3MEG.
3	1N5GT	INF.	*	2KΩ	2KΩ	1.5 MEG	29Ω	*	INF.	3.2MEG.
4	1H5GT	INF.	*	1MEG.	670KΩ	670KΩ	0Ω	*	INF.	1.5MEG.
5	3Q5GT	INF.	*	24KΩ	2KΩ	2MEG	INF.	*	*	

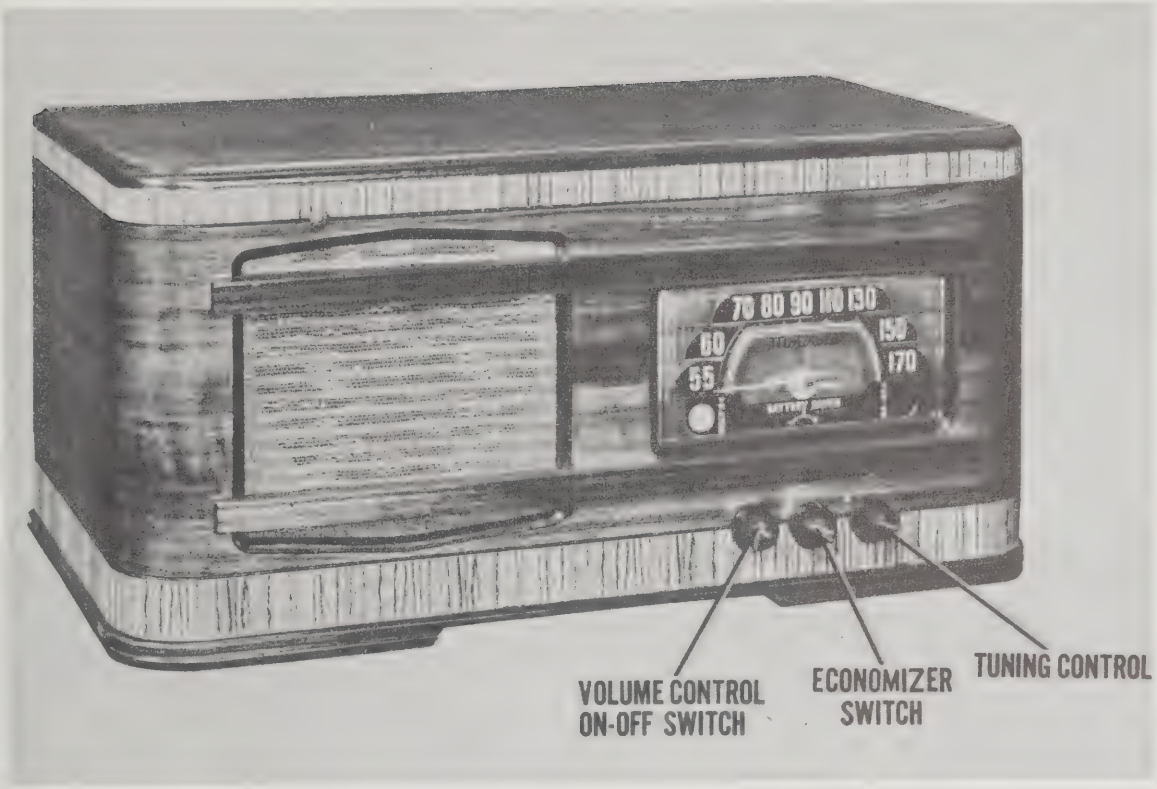
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

469-22

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is shorted to B-.

1 - DC Voltage measurements are at 20,000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
5 - Volume control at maximum, no signal applied for voltage measurements.



MOTOROLA
MODEL 45B12

MOTOROLA
MODEL 45B12

MOTOROLA MODEL 45B12

TRADE NAME	Motorola Model 45B12 (Chassis HS-8)
MANUFACTURER	Galvin Mfg. Corp. 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	Battery Operated Superheterodyne Receiver
TUBES (FOUR)	Types, 1A7GT Converter, 1N5GT IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output.
POWER SUPPLY	1½ Volt "A" Supply & 90 Volt "B" Supply in Battery Pack Form
TUNING RANGE—BROADCAST	538-1720KC RATING 250MA @ 1.5V DC & 13MA 90V DC

ALIGNMENT INSTRUCTIONS

Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid cap of 1A7. Low side to chassis.	455KC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
200 MMF	High side to ant. lead. Low side to ground lead.	1720KC	"	"	A5	" " " "
200 MMF	"	1500KC	Tune for maximum output.	"	A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	1A7GT	1A7GT	7Z	
2	IF Amp.	1N5GT	1N5GT	5Y	
3	Det.-AVC-AF	1H5GT	1H5GT	5Z	
4	Power Output	3Q5GT	3Q5GT	7AP	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5	10	150	23A14727	M-10-150	UT-121	PRS150-12	BR1215	TC42	Pwr. Supp. Bypass
6	.002	400		S-6-002	TC-22	484-002	DT6D2	TP405	Output Plate Bypass
7	.01	200		S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
8	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	" "
9	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	IF Grid Bypass
10	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Conv. Screen Bypass
11	.05	100		S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
12	100	500		MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
13	100	500		MO.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Bypass Diode

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
14A	1 Meg.	1	18A19979	MK402	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 14A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

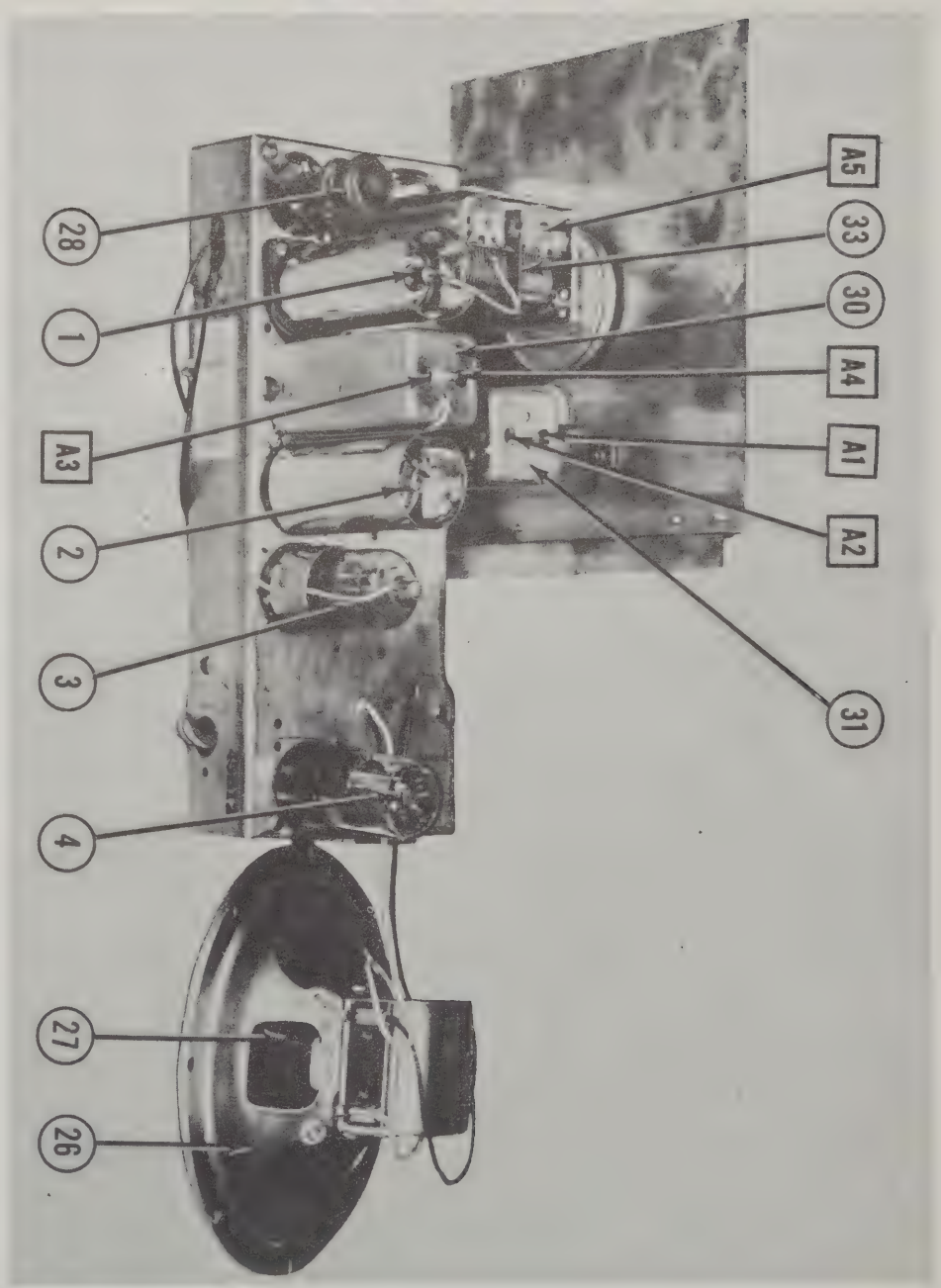
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
15	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
16	220KΩ	½		BTS-220K	Red-Red-Yl. Oscillator Grid
17	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Oscillator Anode Load
18	8.2 Meg.	½		BTS-8.2 Meg.	Gray-Red-Grn. IF Grid
19	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Diode Load
20	8.2 Meg.	½		BTS-8.2 Meg.	Gray-Red-Grn. 1st AF Grid
21	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
22	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Output Grid
23	390Ω	½		BW-½-390	Or.-White-Br. Bias
24	390Ω	½		BW-½-390	Or.-White-Br. Filament String

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: MOTOROLA PART No.	STANCOR PART No.	THORDAR N PART No.		INSTALLATION NOTES
25	8000Ω	4Ω	680Ω	.7Ω	25A15786	A-3878	T-22S47		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

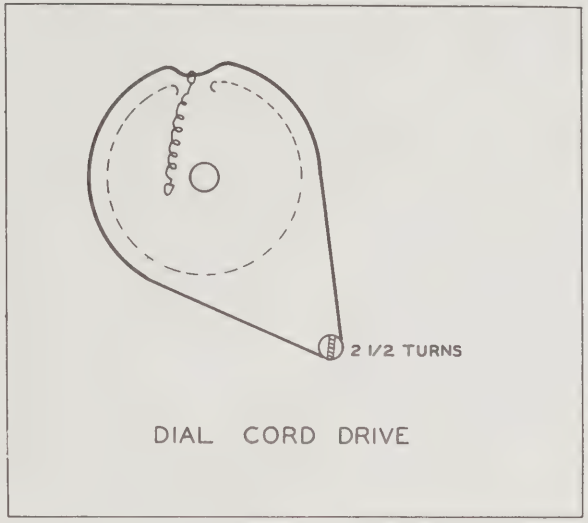
ITEM No.	RATINGS		REPLACEMENT DATA MOTOROLA PART No.	REPLACEMENT DATA JENSEN PART No.	INSTALLATION NOTES
	FIELD	VC IMP.		ST-110	
26	PM	4Ω	50B71087	Mod. P6-V	
	CONE DIA.	VC DIA.			
27	6½"	½"	CONE HAS SPECIAL ADJUSTMENT FEATURE-ORDER FROM MANUFACTURER.		

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MOTOROLA PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
28	Ant. Coil	28Ω	2.7Ω		14-1026	
29	Osc. Coil	2.8Ω	8Ω	27349R	14-1040*	*Add 50 MMFD cap. from grid to high side tuning cap.
30	Input IF	21Ω	21Ω	1X28276	16-6658	
31	Output IF	21.8Ω	25Ω	1X28277	16-6660	

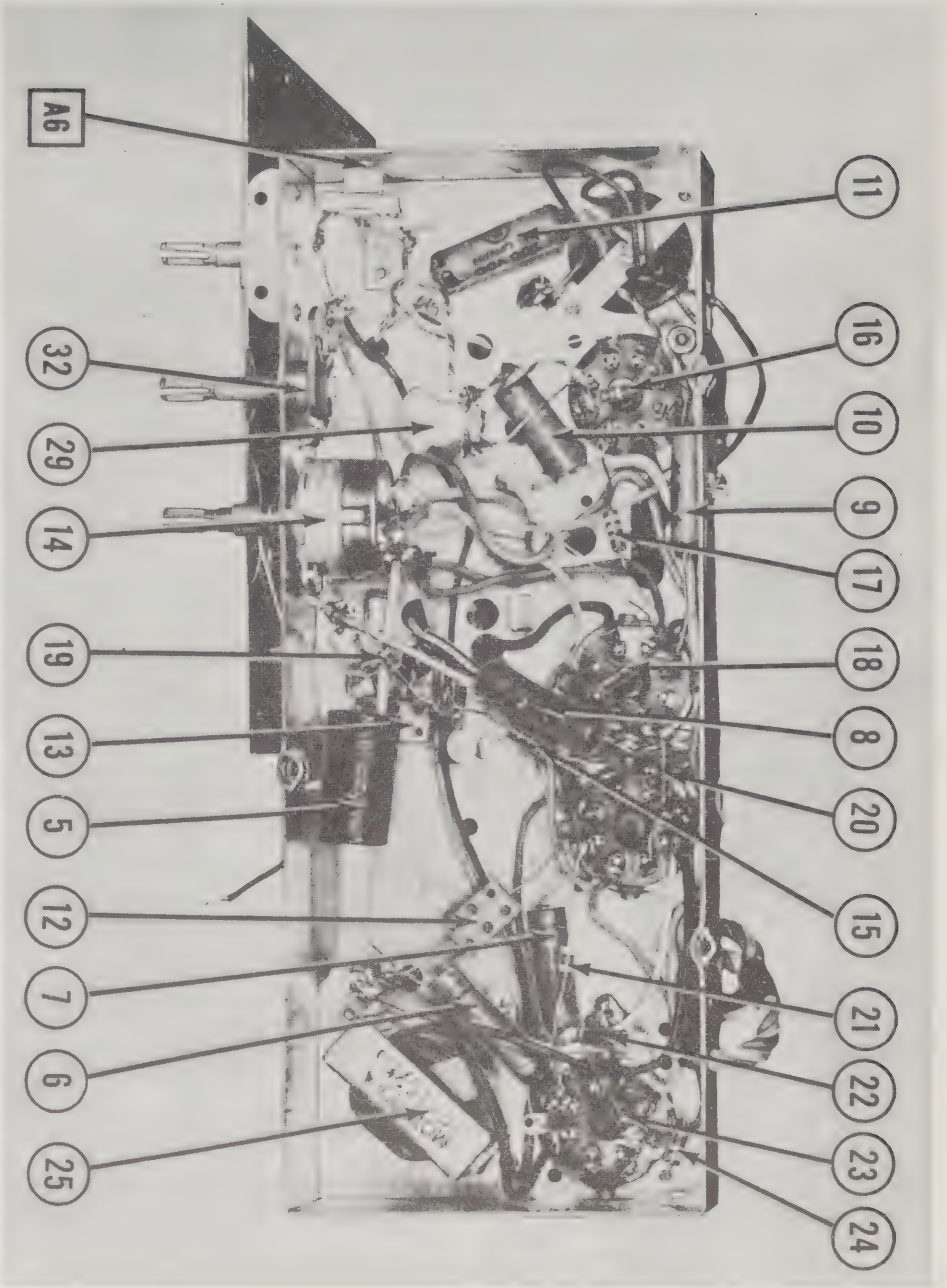
MISCELLANEOUS

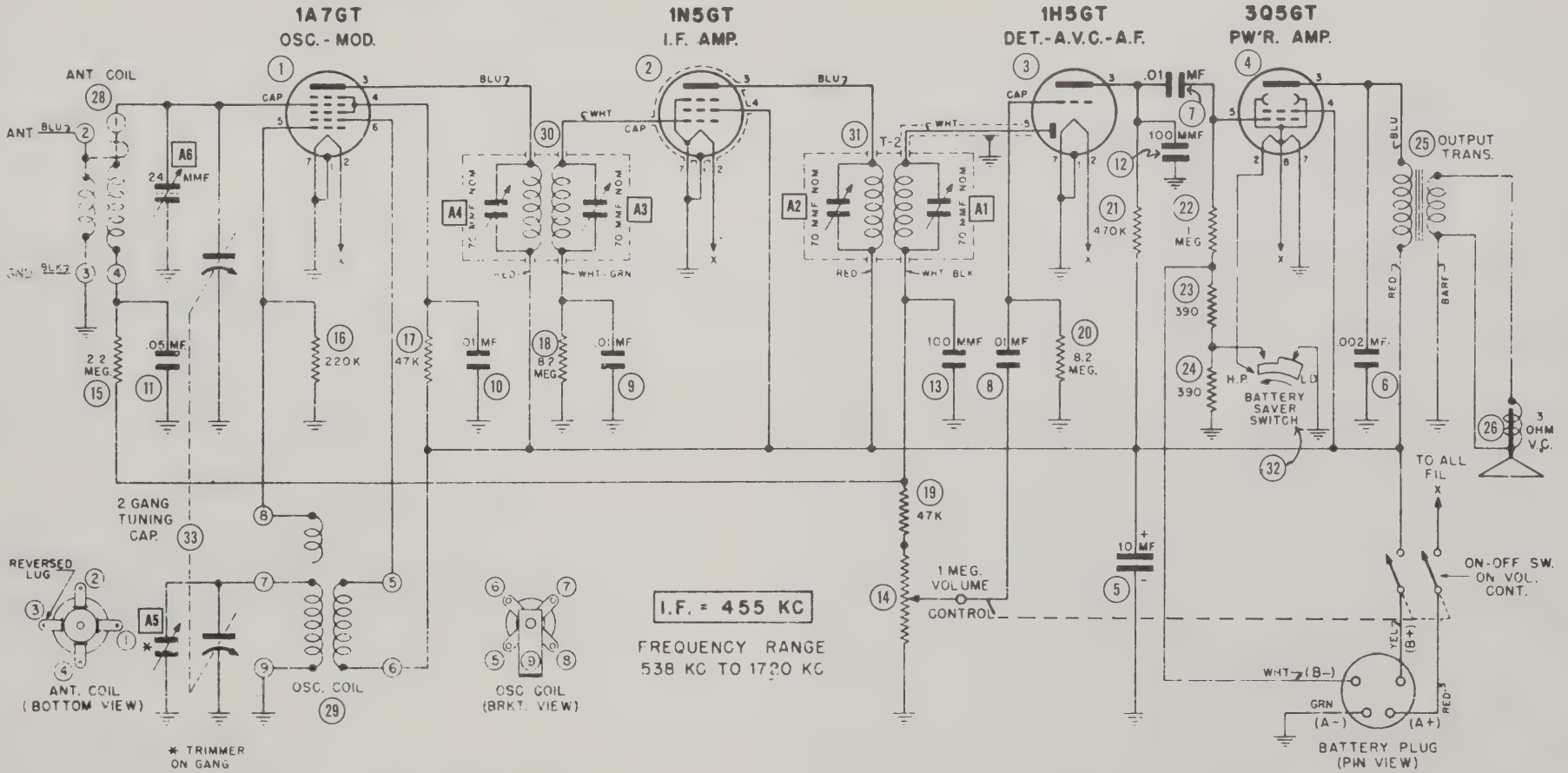
ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
32	Switch		Battery Saver
33	Tuning Cap.		2 Gang Variable Cap.



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT	0V.	1.6V.DC	91V.DC	47V.DC	0V.	91V.DC	0V.	0V.	0V.
2	1N5GT	0V.	1.6V.DC	91V.DC	91V.DC	-.1V.DC	0V.	0V.	0V.	-.1V.DC
3	1H5GT	0V.	1.6V.DC	61V.DC	91V.DC	-.4V.DC	-.1V.DC	0V.	0V.	-.1V.DC
4	3Q5GT	0V.	0V.	86V.DC	91V.DC	-1.4V.DC	-5.5V.DC	0V.	1.6V.DC	

NOTE: READINGS TAKEN WITH BATTERY SWITCH IN HP POSITION.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

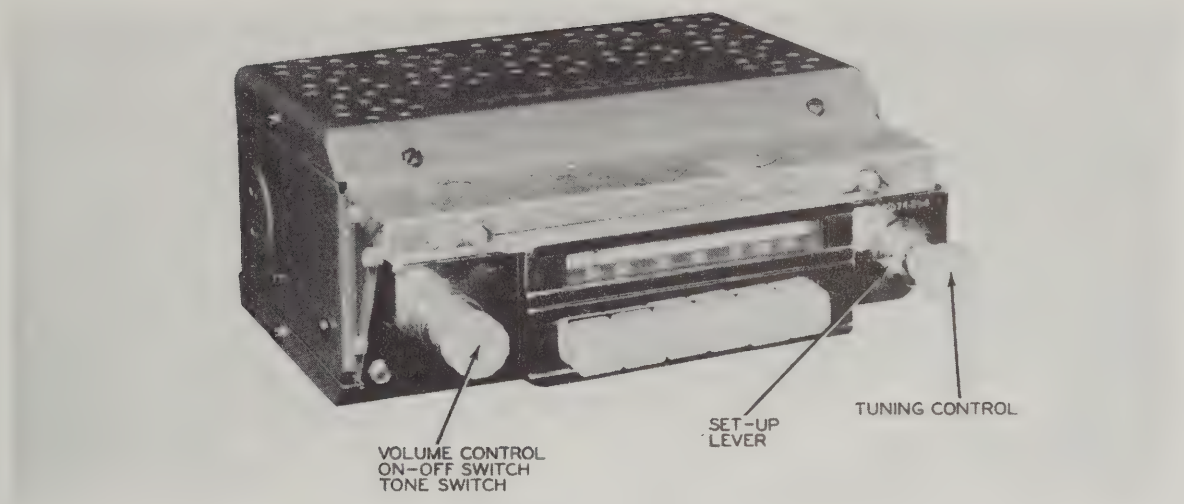
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT	0Ω	*	65KΩ	112KΩ	185KΩ	65KΩ	*	INF.	3.1MEG.
2	1N5GT	0Ω	*	65KΩ	65KΩ	8MEG.	INF.	*	3.1MEG.	8MEG.
3	1H5GT	0Ω	*	535KΩ	65KΩ	870KΩ	8MEG.	*	.5Ω	8MEG.
4	3Q5GT	0Ω	*	65KΩ	65KΩ	1MEG.	350Ω	*	*	

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-23

1. DC Voltage measurements are at 20,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.



PUSH BUTTON ADJUSTMENTS

1. Turn on receiver and allow to warm up for at least 5 minutes.
2. Press the manual button marked "M".
3. Turn the tuning knob until the desired station is tuned in.
4. Press the number one button.
5. Turn the set-up lever clockwise as far as it will go and release, allowing it to return.
6. Turn the tuning knob until the previously heard program is heard. (The dial pointer will not indicate the station to which the button is set.) The dial pointer may reach the end of the dial scale before the desired station is received. However, continue turning the tuning knob until the station is received. The dial pointer mechanism will not be affected.
7. Press the "M" button and the number one button is set. Check the setting of the button by tuning in the desired station having the "M" button pushed in and then push the automatic button. Either button should give the same volume and clarity.
8. Repeat the above procedure, steps 2 through 7, for each of the remaining push buttons.

MOTOROLA MODEL NH6

TRADE NAME	Motorola Model NH6 (1946 Nash)
MANUFACTURER	Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago, Ill.
TYPE SET	Superheterodyne Automotive Set with Automatic Tuning
TUBES (SIX)	Types, 6SK7GT RF Amp., 6SA7GT Converter, 6SK7GT IF Amp., 6SQ7GT Det.-AVC-AF, 6V6GT Power Output, 6X5GT or 0Z4 Rectifier
POWER SUPPLY	6.3 Volts DC
TUNING RANGE—BROADCAST	535-1600KC RATING 7.2 Amps. @ 6.3V DC

ALIGNMENT INSTRUCTIONS

Volume control at maximum volume position and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin 8 (grid of 6SA7. Low side to chassis.)	455KC	High freq. end (Tuning control fully clockwise)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
50 MMF. and 21" coaxial lead. Capacitor at gen. end.	Antenna receptacle.	1600KC	High freq. end. Cores are to be projecting 1-1/8" from ends of cans and tuning against stop.	"	A5, A6, A7.	Adjust for maximum output in order given.
"	"	1425KC	Exactly one full turn from high freq. end.	"	A8,A9, A10.	Adjust cores for maximum output. Mark manual tuning shaft coupling to indicate full turn.
"	"	Gen. power off but leave connected	Four more full turns in.	"	A11	Adjust for maximum noise.
			1400KC	"	A7	Install set in car and connect antenna. Adjust for maximum noise.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7GT	6SK7GT	8N	
2	Converter	6SA7GT	6SA7GT	8AD	
3	IF Amp.	6SK7GT	6SK7GT	8N	
4	Det.-AVC-AF	6SQ7GT	6SQ7GT	8Q	
5	Power Output	6V6GT	6V6GT	7AC	
6A	Rectifier	0Z4	0Z4	4R	0Z4 and 6X5GT Interchangeable in this set.
6B	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	400	23A75429	DY-312	EL-322	AF44J	UP6BJ38	FP339	■ Filter
B	20	400							▲ "
C	20	25				PRS25-25	BR202A		"
8	.006	1600	8A12840	XTIMS10-.006	TR-26	1684-006	MD16D6	OW344	Buffer
9	.5	100	8A19133	S-4-5	TC-5	484-.5	DT4P5	TP431	Hash Filter
10	.5	100	8A19133	S-4-5	TC-5	484-.5	DT4P5	TP431	" "
11	.006	400	8A71910	S-6-006	TC-26	484-006	DT6D6	TP409	6V6 Plate Bypass
12	.004	400	8A71909	S-6-004	TC-24	484-004	DT6D4	TP407	Tone Compensation
13	.03	400	8A71911	S-6-03	TC-13	484-03	DT4S3	TP424	Audio Coupling
14	.05	400	8A14791	S-4-05	TC-15	484-05	DT4S5	TP426	Muting Capacitor
15	.01	400	8K23690	S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
16	.01	400	8K23690	S-4-01	TC-11	484-01	DT4S1	TP421	Tone Compensation
17	.1	400	8K13166	S-4-1	TC-1	484-.1	DT4P1	TP428	Plate Bypass
18	.05	400	8A14791	S-4-05	TC-15	484-05	DT4S5	TP426	Screen Bypass
19	.5	100	8A19133	S-4-5	TC-5	484-.5	DT4P5	TP431	Solenoid Shunt
20	.05	400	8A14791	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
21	.006	100	8A4529	S-6-006	TC-26	484-006	DT6D6	TP409	Ant. Coupling
22	250	500	21R6648	M0.5-325	1FM-325	1468-00025	5W5T25	MC240	Audio Plate Bypass
23	50	300	21R6513	M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Diode Coupling
24A	50		21A70176						Diode Filter
B	50								" "
25	400		21A71872						Fixed Trimmer Cer.
26	50	300	21R6513	M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
27	5		21K70720						RF Coupling
28	90		21A20877						Ant. Filter
66	5		21K70720						RF Coupling Cer. *

*Not used in all models.

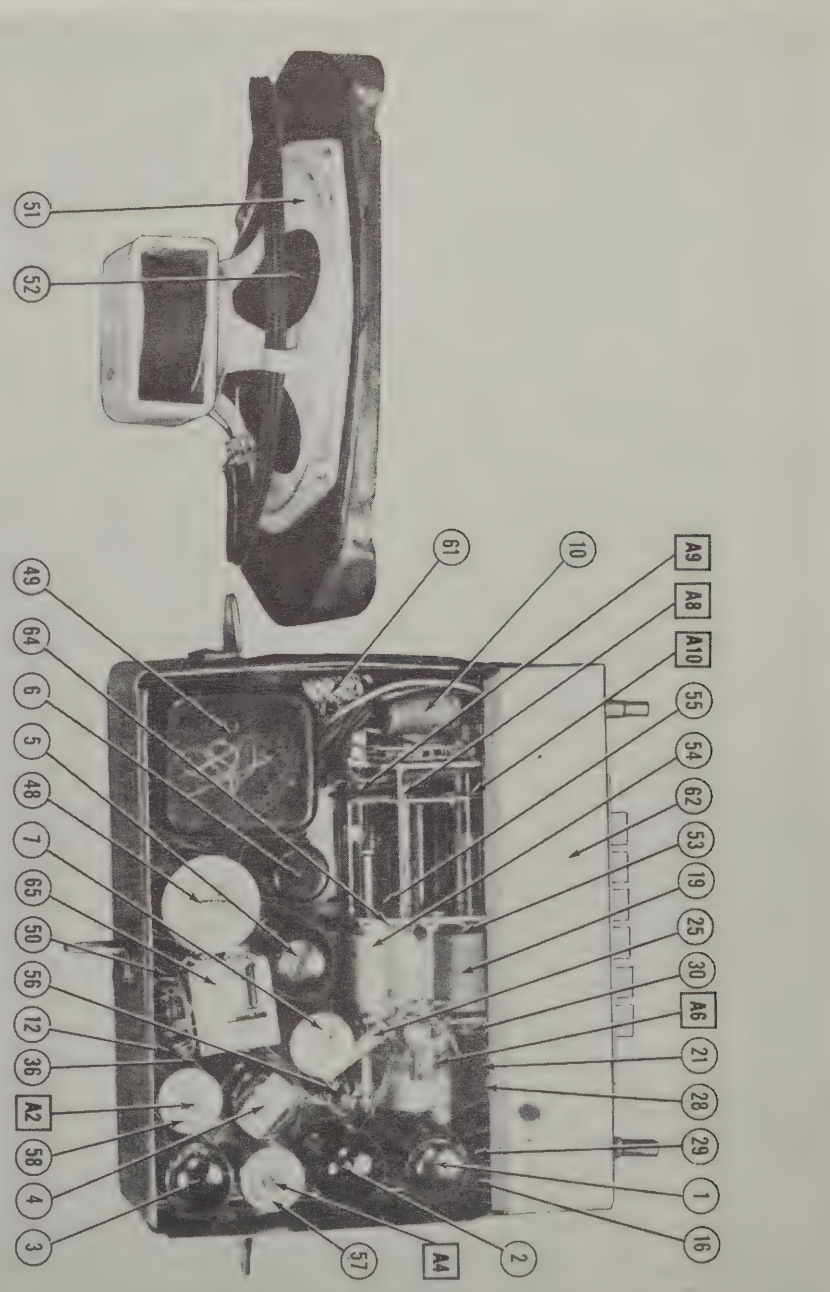
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
29	500K	1	18A70172				Volume Control & Switch 18A71925

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	IRC PART No.	IDENTIFICATION CODES
30	470KΩ	½	6R6032	BTS-470K	Yl.-Vi.-Yl. AVC Network
31	100KΩ	½	6R6075	BTS-100K	Br.-Blk.-Yl. Converter Grid
32	47KΩ	½	6R6056	BTS-47K	Yl.-Vi.-Or. Osc. Grid
33	10KΩ	1	6R6106	BTA-10K	Br.-Blk.-Or. Screen Dropping
34	330Ω	1	6R6147	BTA-330	Or.-Or.-Br. Plate Filter
35	1 Meg.	½	6R6004	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
36	22KΩ	½	6R6028	BTS-22K	Red-Red-Or. Tone Compensation
37	47KΩ	½	6R6056	BTS-47K	Yl.-Vi.-Or. IF Filter
38	3.3 Meg.	½	6R2118	BTS-3.3 Meg	Or.-Or.-Grn. 1st AF Grid
39	2.2 Meg.	½	6R3227	BTS-2.2 Meg	Red-Red-Grn. 1st AF Grid
40	470KΩ	½	6R6032	BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
41	220KΩ	½	6R6015	BTS-220K	Red-Red-Yl. Output Grid
42	1000Ω	1	6R6184	BTA-1000	Br.-Blk.-Red Filter
43	1 Meg.	½	6R6004	BTS-1 Meg.	Br.-Blk.-Grn. Diode Load
44	180Ω	1	6R6390	BW-1-180	Br.-Gray-Br. Voltage Divider Bias
45	47Ω	½	6R5550	BW-½-47	Yl.-Vi.-Blk. " " "
46	50Ω	½	6R6005	BW-½-47	Grn.-Blk.-Blk. Hash Suppression
47	50Ω	½	6R6005	BW-½-47	Grn.-Blk.-Blk. " "

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA MOTOROLA PART No.	MALLORY PART No.	RADIART PART No.	INSTALLATION NOTES
48	Interrupter	6.3	115~	3333	859	5342M	

TRANSFORMER (VIBRATOR)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA MOTOROLA PART No.	STANCOR PART No.	THORDASON PART No.	INSTALLATION NOTES
49	5.3VDC @ 4.3A	600VCT @ .06lA			25B70350B	P-4062	T-14R35*	*Drill new mounting holes

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MOTOROLA PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
50	12000Ω	3.6Ω	370Ω	.6Ω	25B72258	A-3856	T-22847‡		‡Solder tone relay bracket to frame of replacement unit.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA MOTOROLA PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD RES.	VC IMP.		ST-568		
51A	4.0Ω	3.6Ω	50B74946	Mod. E6-RS		
B			50B71900†			†Alternate Speaker
C			50B74041†			† " "
	CONE DIA.	VC DIA.				
52	6-1/8"	3/4"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MOTOROLA PART No.	MEISSNER PART No.	INSTALLATION NOTES
53	Ant. Coil		12.8Ω	1A71881		Items 53, 54, 55 ganged together and slug tuned.
54	RF Coil		12.2Ω	1A71881		
55	Osc. Coil		1.8Ω	1A71879		
56	Osc. Padder	2Ω		24A70227		
57	Input IF	16Ω	14.9Ω	24B70827	16-6666	
58	Output IF	15.5Ω	16.2Ω	24B70827	16-6667	
59	A Choke	0Ω		24K70840		
60	A Choke	0Ω		24A70199		
61	Spkr. Fld.Ch.	0Ω		24K71423		

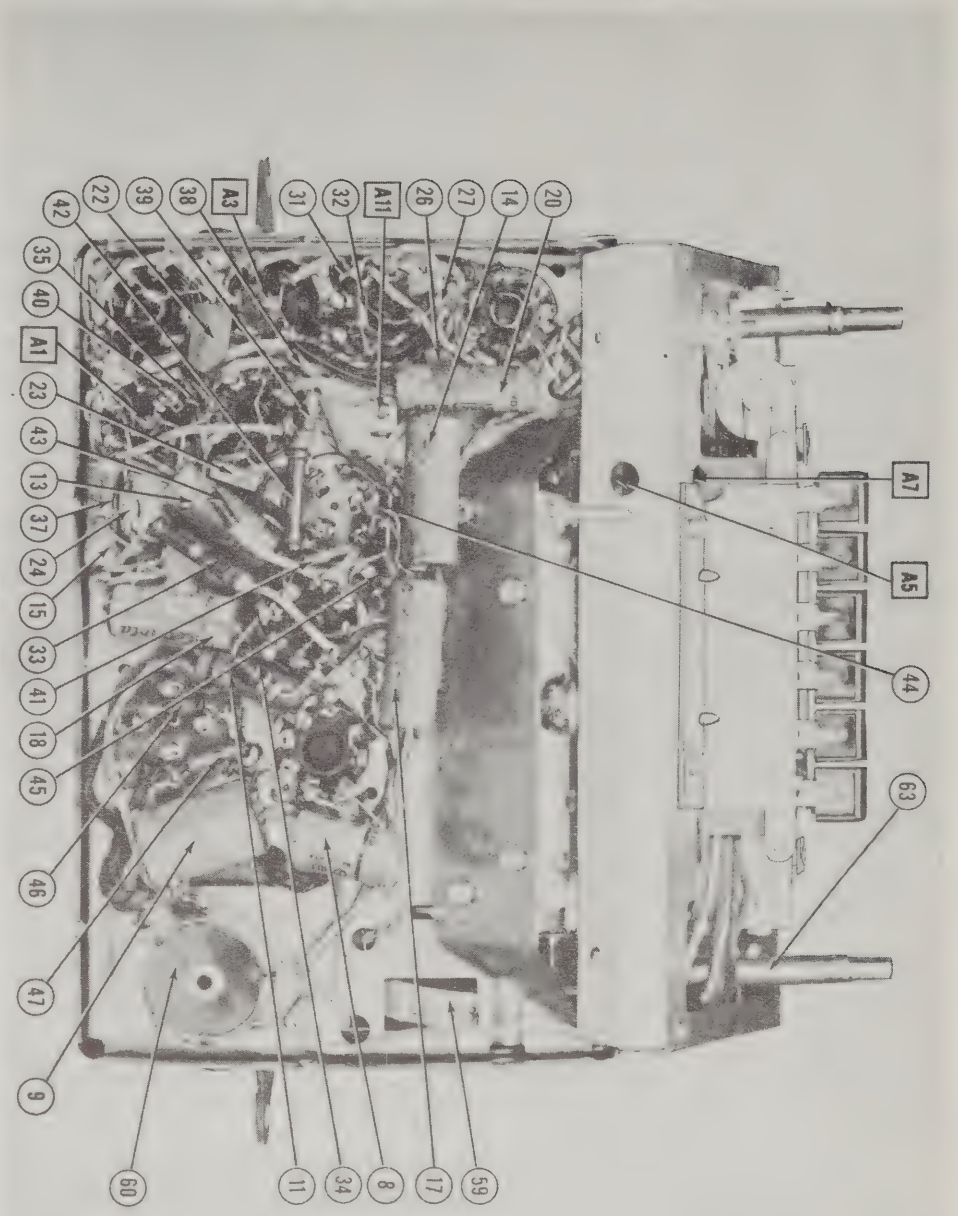
DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA MOTOROLA PART No.		INSTALLATION NOTES
62	Bayonet	6-8	0.25	Blue	65X10867		Type 44

MISCELLANEOUS

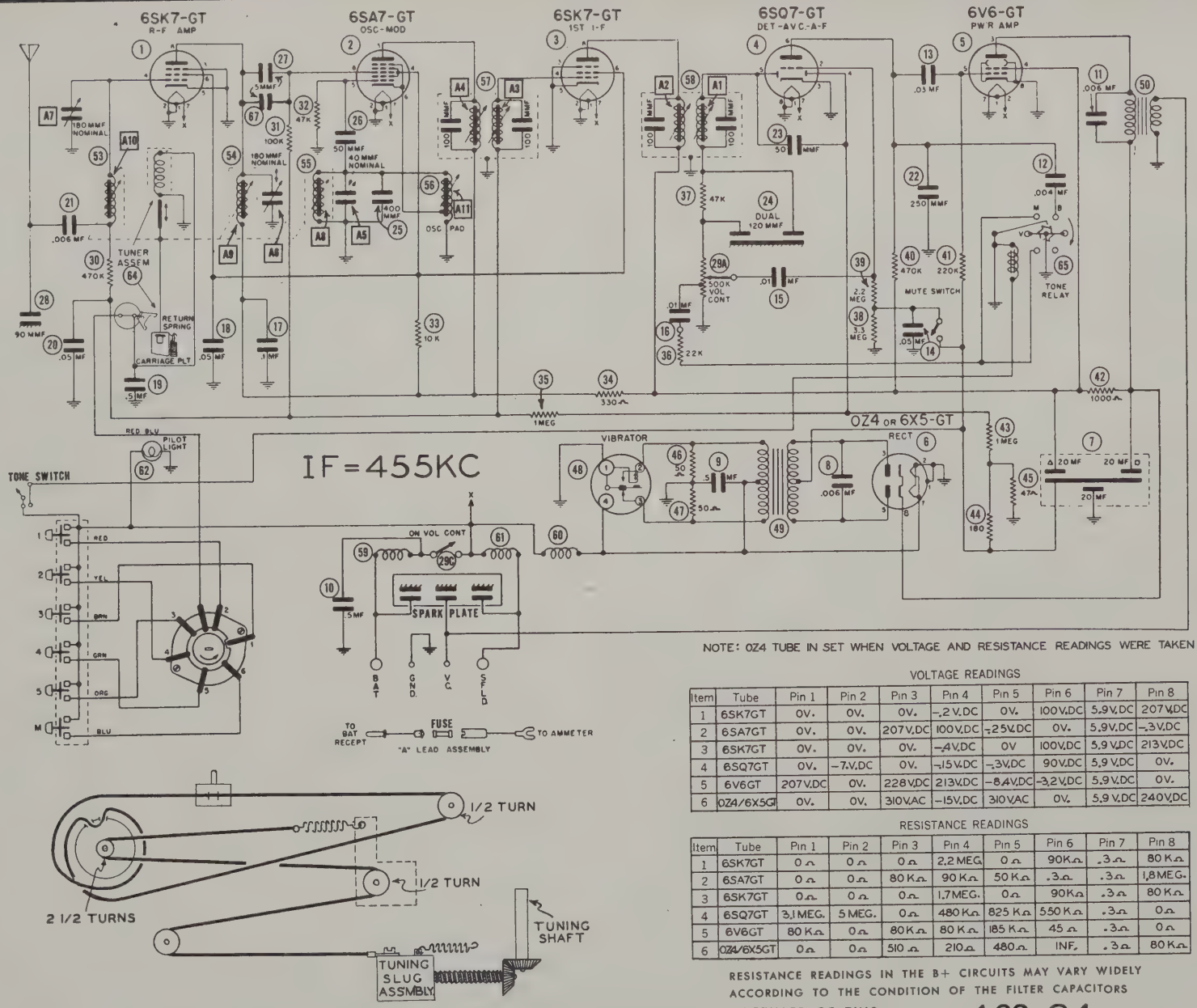
ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
63	Set-up Lever		
64	Tuner Assby.	1X73000	
65	Tone Relay	1X71470	
A5	Trimmer Cap.	20A70214	Osc. Adjustment 30-60 MMF
A6	" "	8A70601	RF Adjustment 50-180 MMF
A7	" "	8A70601	Ant. Adjustment 50-180 MMF
	Selector Switch	40B70952	
	Solenoid Switch	1B70944	Assby.
	Mute Switch	40A70931	
	Tone Switch	40B71383	
	PB Assembly	1K73625	
	Spark Plate Assby.	1X75194	

CHASSIS—BOTTOM VIEW



MOTOROLA MODEL NH6

MOTOROLA MODEL NH6



DIAL CORD DRIVE

NOTE: 0Z4 TUBE IN SET WHEN VOLTAGE AND RESISTANCE READINGS WERE TAKEN.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7GT	0V.	0V.	0V.	-2 V.DC	0V.	100V.DC	5.9V.DC	207 V.DC
2	6SA7GT	0V.	0V.	207 V.DC	100V.DC	-25V.DC	0V.	5.9V.DC	-3V.DC
3	6SK7GT	0V.	0V.	0V.	-4V.DC	0V	100V.DC	5.9 V.DC	213V.DC
4	6SQ7GT	0V.	-7.V.DC	0V.	-15V.DC	-3V.DC	90V.DC	5.9 V.DC	0V.
5	6V6GT	207 V.DC	0V.	228V.DC	213V.DC	-8.4V.DC	-3.2V.DC	5.9 V.DC	0V.
6	0Z4/6X5GT	0V.	0V.	310V.AC	-15V.DC	310V.AC	0V.	5.9 V.DC	240V.DC

RESISTANCE READINGS

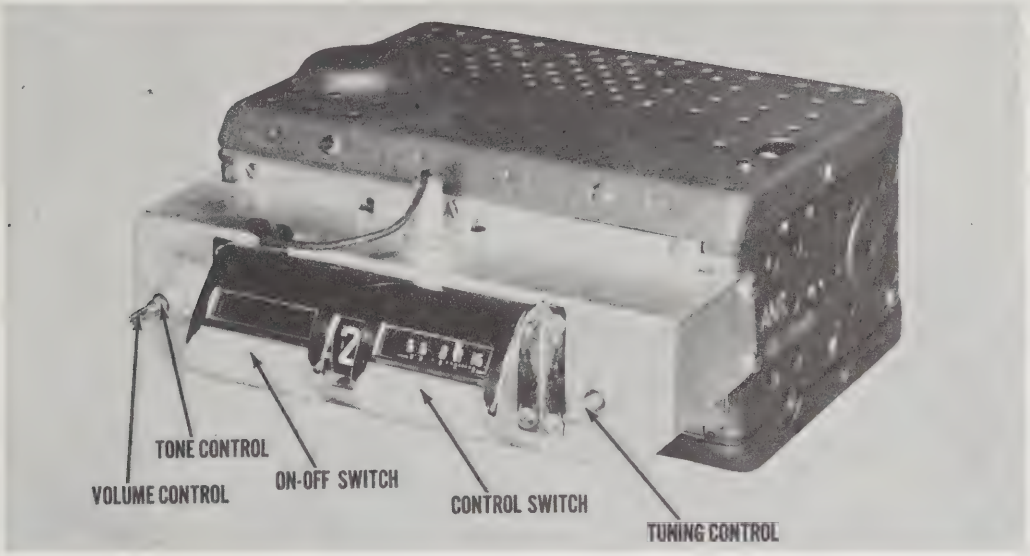
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SK7GT	0 Ω	0 Ω	0 Ω	2.2 MEG.	0 Ω	90KΩ	.3Ω	80 KΩ
2	6SA7GT	0 Ω	0 Ω	80 KΩ	90 KΩ	50 KΩ	.3Ω	.3Ω	1.8MEG.
3	6SK7GT	0Ω	0 Ω	0Ω	1.7MEG.	0Ω	90KΩ	.3Ω	80 KΩ
4	6SQ7GT	3.1 MEG.	5 MEG.	0Ω	480 KΩ	825 KΩ	550 KΩ	.3Ω	0Ω
5	6V6GT	80 KΩ	0Ω	80 KΩ	80 KΩ	185 KΩ	45 Ω	.3Ω	0Ω
6	0Z4/6X5GT	0Ω	0Ω	510 Ω	210Ω	480Ω	INF.	.3Ω	80 KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

469-24

1 - DC Voltage measurements are at 20,000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



NASH
MODEL 6MN082

NASH
MODEL 6MN082

NASH MODEL 6MN082

TRADE NAME	Nash Model 6MN082 (Chassis 6C82)
SUPPLIER	Nash Motors Div. of Nash Kelvinator Corp., Kenosha, Wis.
TYPE SET	Superheterodyne Dual Unit Automotive Set with Automatic Tuning
TUBES (SIX)	Types, 7A7 RF Amp., 7B8 Converter, 7A7 IF Amp., 7B6 Det.-AVC-AF, 7C5 Power Output, 7Y4 Rectifier.
POWER SUPPLY	6.3 Volts DC
TUNING RANGE—BROADCAST	540-1600KC RATING 6.8 Amps. @ 6.3V DC

ALIGNMENT INSTRUCTIONS

Set volume control at maximum volume and have output from signal generator no higher than is necessary to obtain output reading. Plug foot volume control in its socket during alignment. For dummy ant. connect two 30 MMF capacitors in series and place across the output of the signal generator. Connect receiver ant. at the junction of the capacitors. This value of dummy antenna must be used to insure proper tracking when installed in car. If calibration is off after completing adjustments, it can be corrected by loosening dial scale mounting screws and sliding scale to desired position. If cores are adjusted, apply speaker cement to core screws. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #6 (signal grid) of 7B8. Low side to chassis.	265KC	High freq.end	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
See Above Note	High side to ant. lead. Low side to chassis.	535KC	535KC	"	A5	" " " "
"	"	1200KC	Tune for maximum output.	"	A6,A7, A8.	" " " "
The following procedure should be followed only when a core or coil has been replaced.						
See Above Note	High side to ant. lead. Low side to chassis.	1700KC	High freq. end.	Across voice coil.	A5,A6, A7,A8.	Screw the cores completely out of the antenna, R.F., converter and oscillator coils. Adjust A5, A6, A7 and A8 for maximum output. Replace cores to their approximate original positions.
"	"	1200KC	1200KC	"	A9	Adjust cores for maximum output
"	"	"	Tune for maximum output.	"	A10,A11 A12.	" " " " "
"	"	600KC	"	"	A13	Rock tuning control and adjust for maximum output. Check receiver at 1200KC. If weak or off calibration, repeat last three steps.
After all adjustments have been made, reinstall in car. Allow to warm up for approximately 15 minutes and, with antenna extended, tune in weak station near 1200KC and adjust A8 for maximum output.						

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1946 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: NASH PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	7A7	7A7	8V	
2	Converter	7B8	7B8	8X	
3	IF Amp.	7A7	7A7	8V	
4	Det.-AVC-AF	7B6	7B6	8W	
5	Power Output	7C5	7C5	6AA	
6	Rectifier	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NASH PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	20	350	22-1387	DY-2x20-350	EL-212	AF32K4A	UP4CJ5	FP369	■ Filter
B	10	300						"	▲ "
C	20	25		M-25-25				TC26	Cath. Bypass
8	.008	1600	22-1448	XTIMS10-.008	TR-28	1689-008	MD16D8	0W333	Buffer
9	.5	120	22-908	S-4-5	TC-5	484-.5	DT4P5	TP431	Hash Filter
10	.5	120	22-908	S-4-5	TC-5	484-.5	DT4P5	TP431	" "
11	.005	600	22-838	S-6-005	TC-25	684-005	DT6D5	TP408	Output Plate Bypass
12	.003	600	22-1180	S-6-003	TC-23	684-003	DT6D3	TP406	Tone Compensation
13	.01	600	22-1170	S-6-01	TC-11	684-01	DT6S1	TP410	Audio Coupling
14	.05	200	22-250	S-4-05	TC-15	484-05	DT4S5	TP426	Tone Compensation
15	.005	600	22-838	S-6-005	TC-25	684-005	DT6D5	TP408	Audio Coupling
16	.05	200	22-250	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
17	.1	400	22-170	S-4-1	TC-1	484-.1	DT4P1	TP428	Screen Bypass
18	.1	400	22-170	S-4-1	TC-1	484-.1	DT4P1	TP428	RF Cath. Bypass
19	.02	200	22-1270	S-4-02	TC-12	484-02	DT4S2	TP423	Tone Compensation
20	250	500	22-182	MO.5-325	1FM-325	1468-00025	5W5T25	MC240	Audio Plate Bypass
21	100	500	22-162	MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Fixed Padder
22	100	500	22-162	MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor
23	350		22-1478						Fixed Trimmer-Cer.
24	1000	500		MO.3-21	1FM-21	1467-001	1W5D1	MC455	RF Coupling
25	4000	500		MW.5-24	1FM-24	1467-004	1D5D4	MC463	AVC Filter

CONTROLS

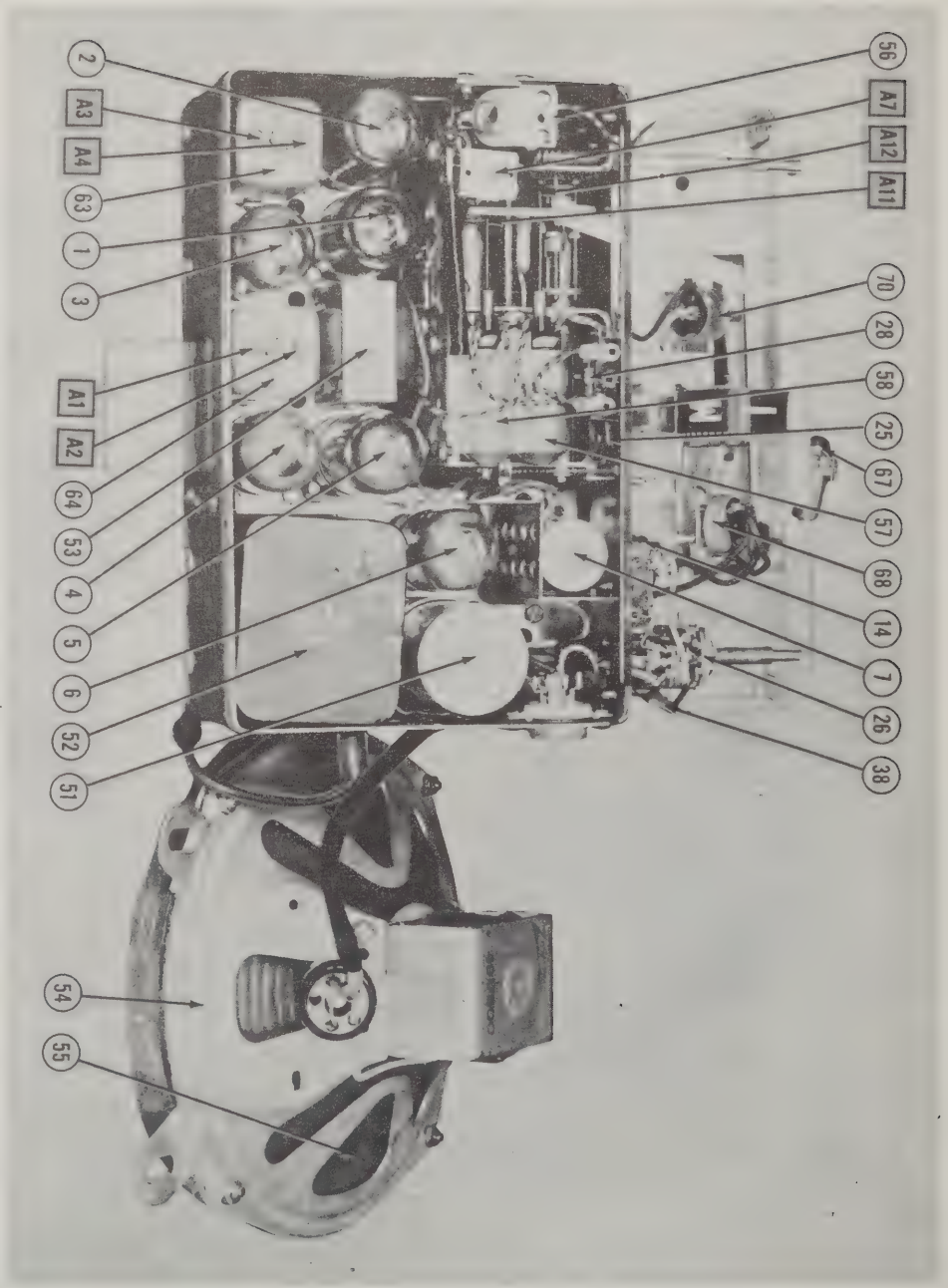
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NASH PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
26A	1.5 Meg	1					Tone Control - See Note 1
B	250KΩ	1	63-1342				Volume Control - See Note 1
C	Switch						Switch on Vol. Control-See Note 2
27	600Ω	1	63-1379				Sensitivity Control

Note 1 - Tone and volume controls ganged together and operated by concentric shafts.
Note 2 - Foot volume control switch on rear of volume control-Item 26B.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NASH PART No.	IRC PART No.	IDENTIFICATION CODES
28	330KΩ	½	63-1392	BTS-330K	Or.-Or.-Yl. AVC Network
29	18KΩ	½		BTS-18K	Br.-Gray-Or. RF Plate Load
30	330KΩ	½	63-1392	BTS-330K	Or.-Or.-Yl. AVC Network - See Note 3
31	68KΩ	½	63-1396	BTS-68K	Blue-Gray-Or. Oscillator Grid
32	15KΩ	½	63-1401	BTS-15K	Br.-Grn.-Or. Oscillator Plate
33	6.8 Meg.	½	63-1416	BTS-6.8 Meg.	Blue-Gray-Grn. AVC Network
34	1 Meg.	½	63-1390	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
35	33KΩ	1	63-1398	BTS-33K	Or.-Or.-Or. Screen Dropping

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	NASH PART No.	IRC PART No.	
36	100Ω	½	63-1414	BW-½-100	Br.-Blk.-Br. RF Cathode
37	47Ω	½	63-1393	BW-½-47	Yl.-Vi.-Blk. Audio Voltage Divider
38	10KΩ	½	63-1394	BTS-10K	Br.-Blk.-Or. Tone Compensation
39	15 Meg.	½	63-1400	BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
40	330KΩ	½	63-1392	BTS-330K	Or.-Or.-Yl. 1st AF Plate Load
41	330KΩ	½	63-1392	BTS-330K	Or.-Or.-Yl. Output Grid
42	3300Ω	½	63-1418	BTS-3300	Or.-Or.-Red RF Grid
43	120Ω	½	63-1410	BW-½-120	Br.-Red-Br. Output Cathode
44	270Ω	1	63-1369	BT-1-270	Red-Vi.-Br. " "
46	82Ω	½	63-1399	BW-½-82	Gray-Red-Blk. Hash Suppression
47	82Ω	½	63-1399	BW-½-82	Gray-Red-Blk. " "
48	1800Ω	2	63-1368	BT-2-1800	Br.-Gray-Red Filter
49	1 Meg.	½	63-1390	BTS-1 Meg.	Br.-Blk.-Grn. Tone Compensation-See Note 3
50	47KΩ	½	63-1417	BTS-47K	Yl.-Vi.-Or. Tone Compensation

Note 3 - Not used in all models.

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				NASH PART No.	MALLORY PART No.	RADIART PART No.	
51	Interrupter	6.3	115~	190-20	859	5301	

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	NASH PART No.	STANCOR PART No.	THORDARSON PART No.	INSTALLATION NOTES
52	5.7V DC @ 3.3A	520V CT @ .048A			95-914		T-22R20†	†Drill new mounting holes.

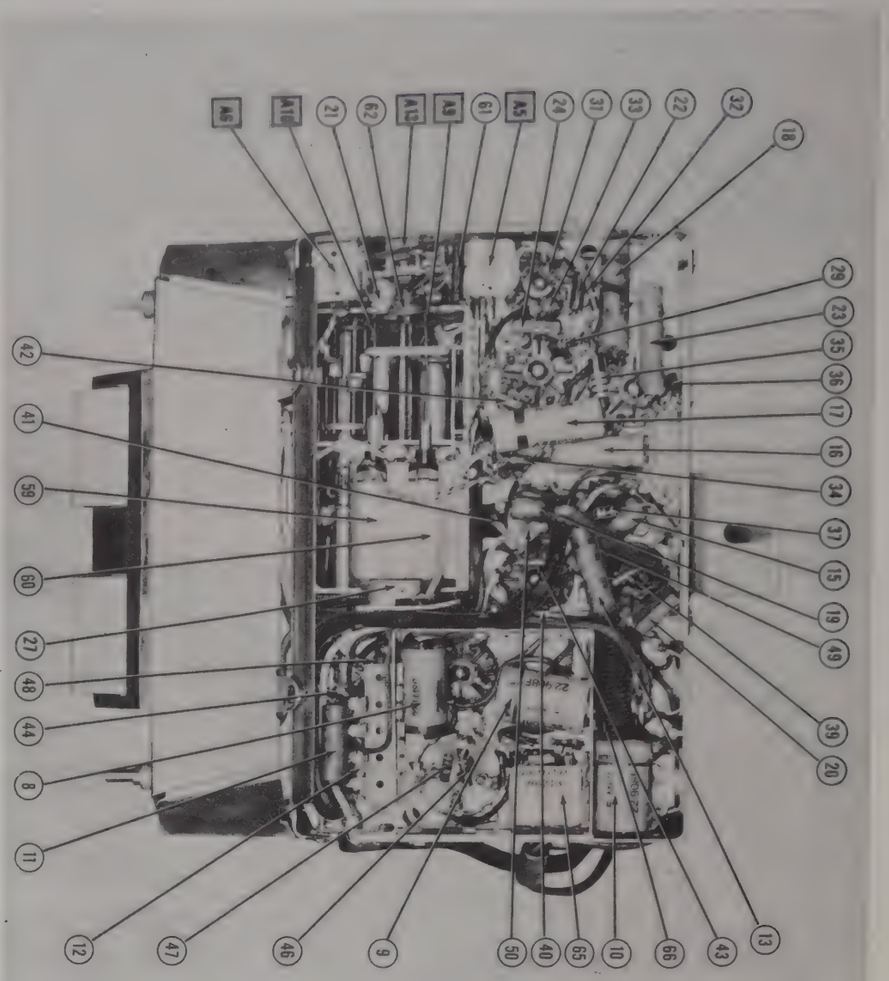
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		NASH PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
53	4400Ω	3.1Ω	370Ω	.6Ω	95-915	A-3850*	T-22S46*		*Bend mounting tabs down, insert through slots and bend over.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD RES.	VC IMP;	NASH PART No.	JENSEN PART No.		
54	4.1Ω	3.1Ω	49-500	ST-436 Mod. F8-RS		
	CONE DIA.	VC DIA.				
55	7-3/8"	3/4"	208-500	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.		

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

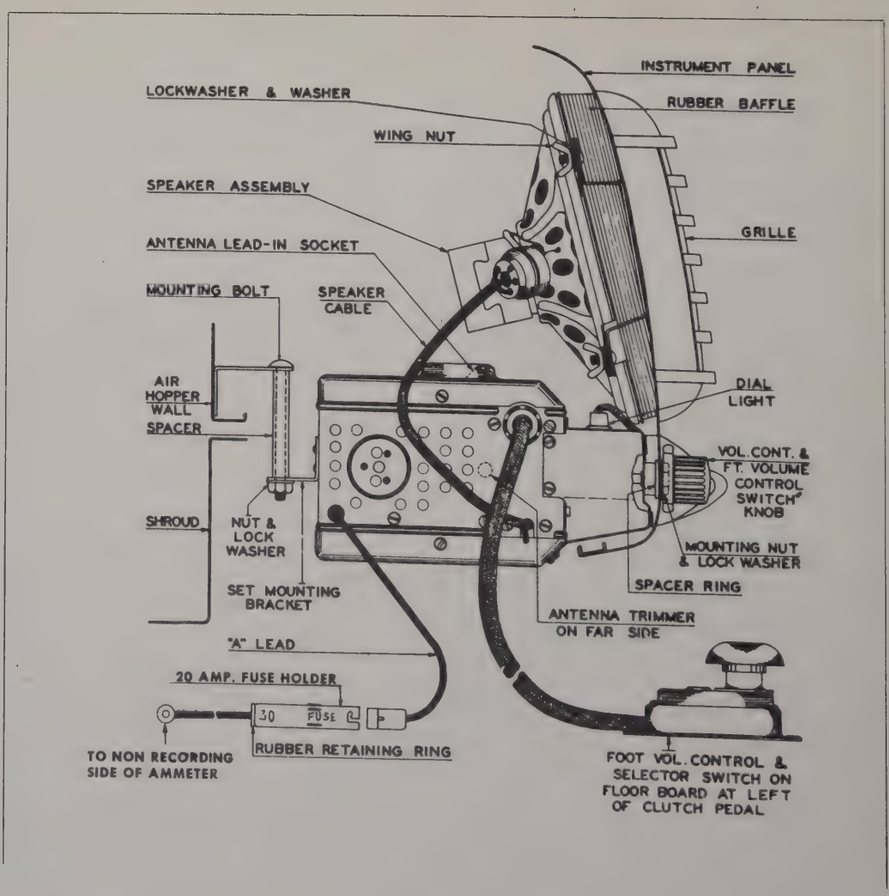
ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	NASH PART No.	MEISSNER PART No.	
56	Ant. Choke	1Ω		S8819		
57	Preselect. Coil		14.5Ω	S12060		Items 57, 58, 59, 60 ganged together & slug tuned.
58	RF Coil		14Ω	S12060		
59	Det. Coil		13Ω	S12060		
60	Osc. Coil		2.5Ω	S12053		
61	Osc. Trimmer	1Ω		S11229		
62	Osc. Padder	4.5Ω	2.5Ω	S11231		
63	Input IF	60Ω	60Ω	95-916		
64	Output IF	60Ω		95-917		
65	Vib. Choke	0Ω		20-213		
66	"A" Choke	0Ω		S11232		

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					NASH PART No.		
67	Bayonet	6-8	0.2	White	100-32		Type 51

MISCELLANEOUS

ITEM No.	PART NAME	NASH PART No.	NOTES
68	Switch	85-353	On-Off
69	Foot Control	S12348	Vol. Control, Switch, Cable & Plug
70	Switch	S11270	Hand Selector & Muting Assby.
A5	Trimmer Cap.	22-1378	Osc. Adj.
A6	" "	22-1377	Det. "
A7	" "	22-1376	RF "
A8	" "	22-1420	Ant. "
	Dial Crystal	192-86	
	Escutcheon	S11395	Dial Crystal & Key Plate Assby.
	Dial Scale	26-333	Manual Tuning
	" Pointer	59-154	
	Knob	46-533	Selector (2 Used)
	"	46-485	Volume Control
	"	46-534	Tone Control



NOTE: POSITIVE OF BATTERY IS GROUNDED.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	-6 V.DC	160 V.DC	90 V.DC	2 V.DC	0V.	-4V.DC	2V.DC	0V.
2	7B8	0V.	230V.DC	180V.DC	-4.8V.DC	90V.DC	-4V.DC	2 V.DC	-6V.DC
3	7A7	-6V.DC	230V.DC	90V.DC	0V.	0V.	-4V.DC	.65V.DC	0V.
4	7B6	-6V.DC	95V.DC	-.4 V.DC	0V.	-.5V.DC	-.5V.DC	0V.	0V.
5	7C5	-6V.DC	255V.DC	230V.DC	10 V.DC	0V.	0V.	14 V.DC	0V.
6	7Y4	0V.	0V.	295V.AC	0V.	0V.	295V.AC	265V.DC	-6V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	7A7	.4Ω	268KΩ	283KΩ	150Ω	0Ω	1.3MEG.	150Ω	0Ω
2	7B8	0Ω	250KΩ	265KΩ	60KΩ	283KΩ	975KΩ	150Ω	.4Ω
3	7A7	.4Ω	250KΩ	283KΩ	0Ω	0Ω	975KΩ	94Ω	0Ω
4	7B6	.4Ω	580KΩ	15MEG.	0Ω	215KΩ	215KΩ	0Ω	0Ω
5	7C5	.4Ω	250KΩ	250KΩ	253Ω	300KΩ	345KΩ	390Ω	0Ω
6	7Y4	0Ω	INF.	310Ω	INF.	INF.	350Ω	250KΩ	.4Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6.3 volts at battery terminals for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DELAYED AUTOMATIC MUTING CIRCUIT

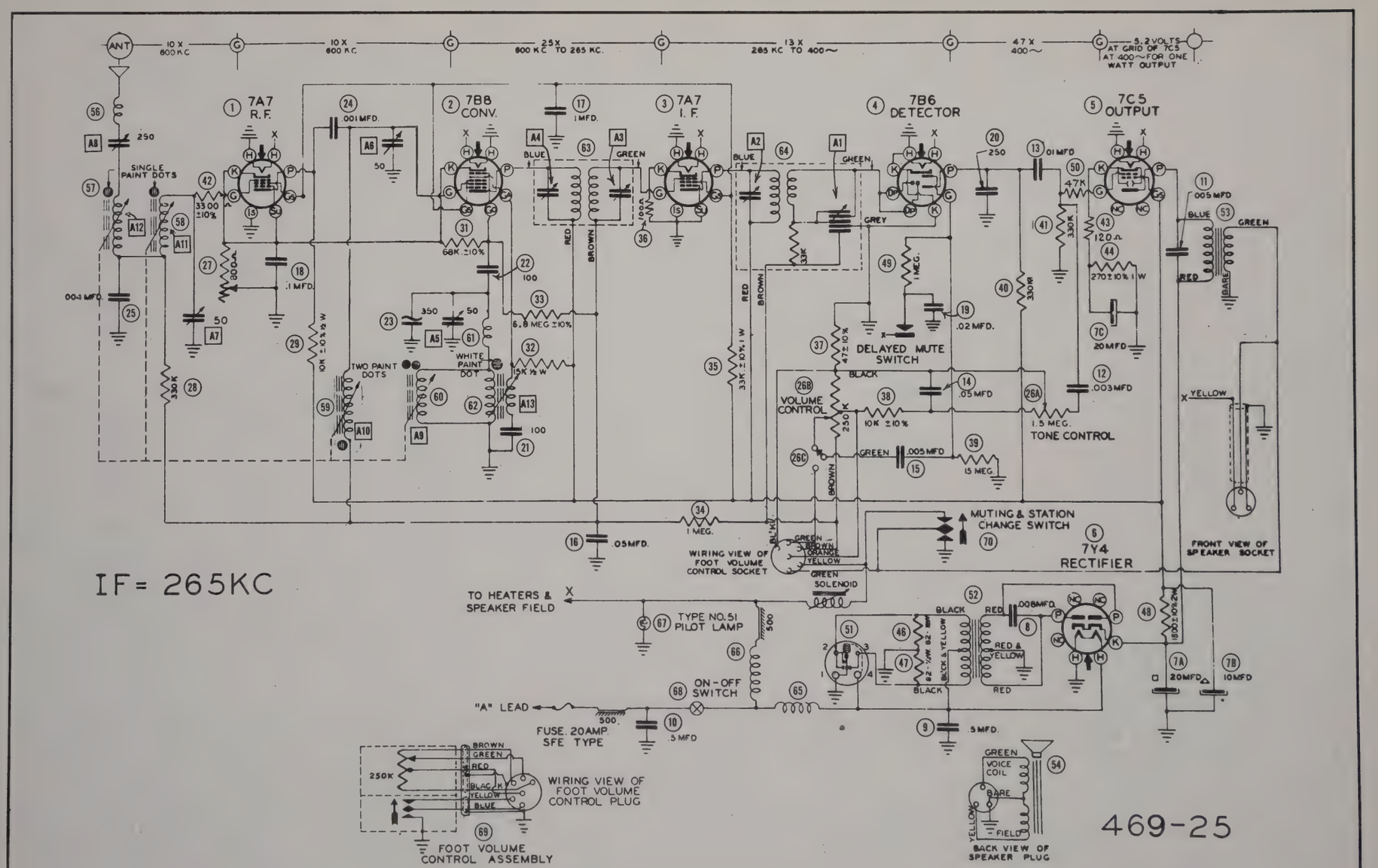
Pressing either the Push-bar or the foot control switch automatically mutes the receiver for the duration of the change cycle. This action is accomplished by applying 6 volts negative to the 7B6 first audio grid through the 1 megohm resistor Item 49. (See schematic diagram.) This negative voltage blocks off the grid of the 7B6 until the voltage bleeds off through the 15 megohm resistor Item 39. Then the receiver will again operate normally. NOTE: If the battery polarity is reversed the receiver will not mute and it may become distorted during the change cycle. Always connect the positive (+) terminal of the storage battery or power supply to the receiver case when checking the receiver.

AUTOMATIC TUNING

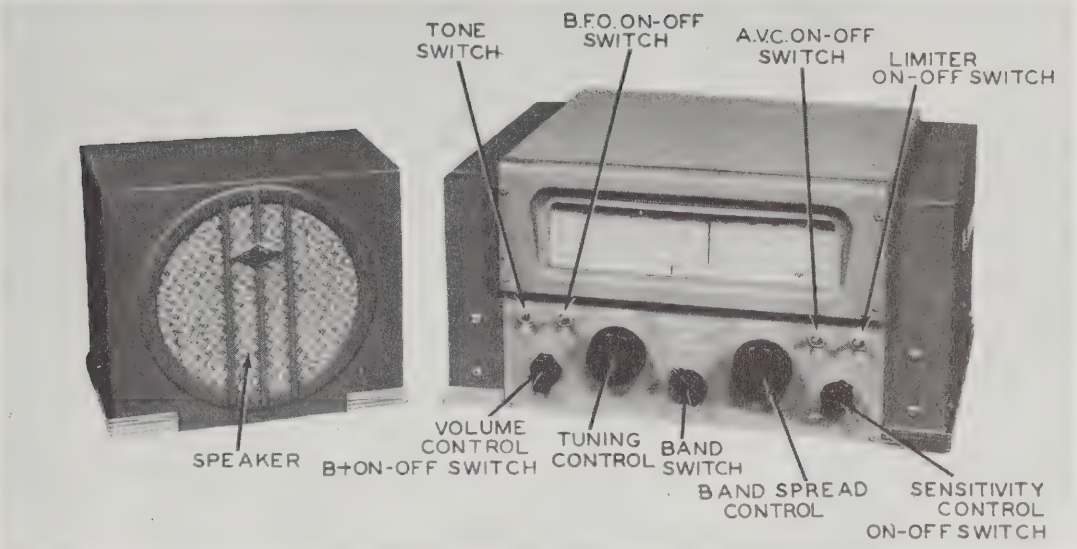
There are five automatic tuning positions which may be adjusted to five desired stations. If these positions have not been previously adjusted proceed as follows:

1. Press station selector bar until number 1 appears in station indicator window.
2. Pull manual tuning knob outward to engage the automatic mechanism.
3. Select the station desired and tune to its frequency by turning tuning knob. Tune very carefully for clearest reception.
4. Press station selector bar, pull manual tuning knob outward, and tune in station desired for No. 2 position. Use same procedure for positions No. 3, 4 and 5.

When the five automatic positions have been adjusted to the five desired stations as instructed, it is only necessary to press the station selector bar to return to dial tuning, or any one of the stations adjusted on the Automatic.



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE



NATIONAL MODEL NC-46

TRADE NAME National Model NC-46
MANUFACTURER National Co., Inc., 61 Sherman St., Malden, Mass.
TYPE SET AC-DC 4 Band Superheterodyne Communications Receiver
TUBES (TEN) Types, 6K8 Converter, 6SG7 1st IF Amp., 6SG7 2nd IF Amp., 6H6 2nd Det.-Limiter, 6SJ7 BFO, 6SF7 AVC, 6SC7 Amp.-Phase Inv., 2-25L6GT Power Output, 25Z5GT Rectifier.

POWER SUPPLY 110-130 Volts AC — RATING .540 Amps. @ 117V AC
TUNING RANGE—BROADCAST 540-1600KC — **SHORT WAVE** 1.55-4.6MC, 4.4-12.0MC, 11.5-30.0MC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at last reference mark at the left end of the "D" scale. Disconnect the antenna and set the controls as follows: Volume control at maximum, tone switch at "H1" position, C.W.O. off, A.V.C. off, limiter off and sensitivity control at maximum. To determine correct IF Freq., feed signal into converter grid and slowly turn signal generator between 452 and 458KC. At the point where there is a sharp increase in the output is the correct IF freq. Keep band spread pointer at 90 throughout alignment procedure. Care should be taken that the oscillator is not aligned on the image freq. To check, increase the output of the signal generator and tune the receiver approx. 910KC below the signal generator freq. The image freq. should be heard and should be considerably weaker. If the image freq. is not heard, the oscillator trimmer should be decreased in capacity until the fundamental freq. appears at the proper dial setting. Use isolation trans. if available. If not, connect capacitor in series with the low side of the signal generator and chassis. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to grid cap of 6K8. Low side to chassis.	See instructions above	D	High freq. end.	Across voice coil	A1,A2, A3,A4, A5,A6.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
.1 MFD.	"	"	"	"	"	A7	Turn CWO switch "on" and adjust for an approximate 1000 cycle audio note.
500 ohm carbon resistor	High side to ant. terminal. Low side to chassis.	30.0MC	A	30.0MC	"	A8	Turn CWO to "off" position. Adjust for maximum output.
"	"	28.0MC	"	Tune for maximum output.	"	A9	Rock dial and adjust for maximum output.
"	"	12.0MC	B	12.0MC	"	A10	Adjust for maximum output.
"	"	11.0MC	"	Tune for maximum output.	"	A11	Rock dial and adjust for maximum output.
"	"	4.6MC	C	4.6MC	"	A12	Adjust for maximum output.
"	"	4.0MC	"	Tune for maximum output.	"	A13	Rock dial and adjust for maximum output.
"	"	1500KC	D	1500KC	"	A14	Adjust for maximum output.
"	"	600KC	"	600KC	"	A15	Adjust for maximum output. Recheck A14 at 1500KC.
"	"	1400KC	"	Tune for maximum output.	"	A16	Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: NATIONAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6K8	6K8	8K	
2	1st IF Amp.	6SG7	6SG7	8BK	
3	2nd IF Amp.	6SG7	6SG7	8BK	
4	2nd Det.-Limiter	6H6	6H6	7Q	
5	BFO	6SJ7	6SJ7	8N	
6	AVC	6SF7	6SF7	7AZ	
7	Amp.-Phase Inv.	6SC7	6SC7	8S	
8	Power Output	25L6GT/G	25L6GT/G	7AC	
9	Power Output	25L6GT/G	25L6GT/G	7AC	
10	Rectifier	25Z5GT	25Z5GT	6E	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: NATIONAL PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
11	40	150		M-40-150	UT-401	PRS150-40	BR4015	TC48	Filter
12	40	150		M-40-150	UT-401	PRS150-40	BR4015	TC48	"
13	25	50		M-25-50	TA-525	PRS50-25	BR255	TC36	Audio Cath. Bypass
14	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Line Filter
15	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	BFO Plate Decoupling
16	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Filament Bypass
17	.02	400		S-4-02	TC-12	484-02	DT4S2	TP423	Tone Compensation
18	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	25L6 Plate Bypass
19	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
20	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	" "
21	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Vol. Cont. Isolation
22	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
23	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Noise Limiter Filter
24	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	2nd IF Plate Bypass
25	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	2nd IF Screen Bypass
26	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	2nd IF Cath. Bypass
27	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	2nd IF Grid Bypass
28	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	1st IF Plate Bypass
29	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	1st IF Screen Bypass
30	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	1st IF Cath. Bypass
31	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	RF Bypass Pwr. Supp.
32	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	AVC Filter
33	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	AVC Cath. Bypass
34	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	1st IF Grid Bypass
35	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Conv. Plate Bypass
36	.1	200		S-4-1M	TC-10	484-.1	DT4W1	TP422	RF Bypass Pwr. Supp.
37	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Conv. Screen Bypass
38	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Conv. Cath. Bypass
39	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Cabinet Isolation
40	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	AVC Filter
41	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Voice Coil Isolation
42	270	500		MO.5-325	1FM-325	1468-00025	5W5T25	MC240	Audio Grid Bypass
43	1	400							BFO Coupling
44	50	500		MO.5-45	1FM-45	1468-00005	5W5Q5	MC225	Audio Coupling
45	1000	500		MO.3-21	1FM-21	1467-001	5W5D1	MC255	AVC Diode Coupling
46	270	500		MO.5-325	1FM-325	1468-00025	5W5T25	MC240	6H6 Plate Bypass
47	100	500		MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor
48	4700	500		MW.5-25	1FM-25	1467-005	1D5D5	MC465	Osc. Coupling
49	Capacitor Ratings Differ for each Coil Range and Definite Ratings cannot be Listed.								
112	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	RF Bypass Pwr. Supp.*

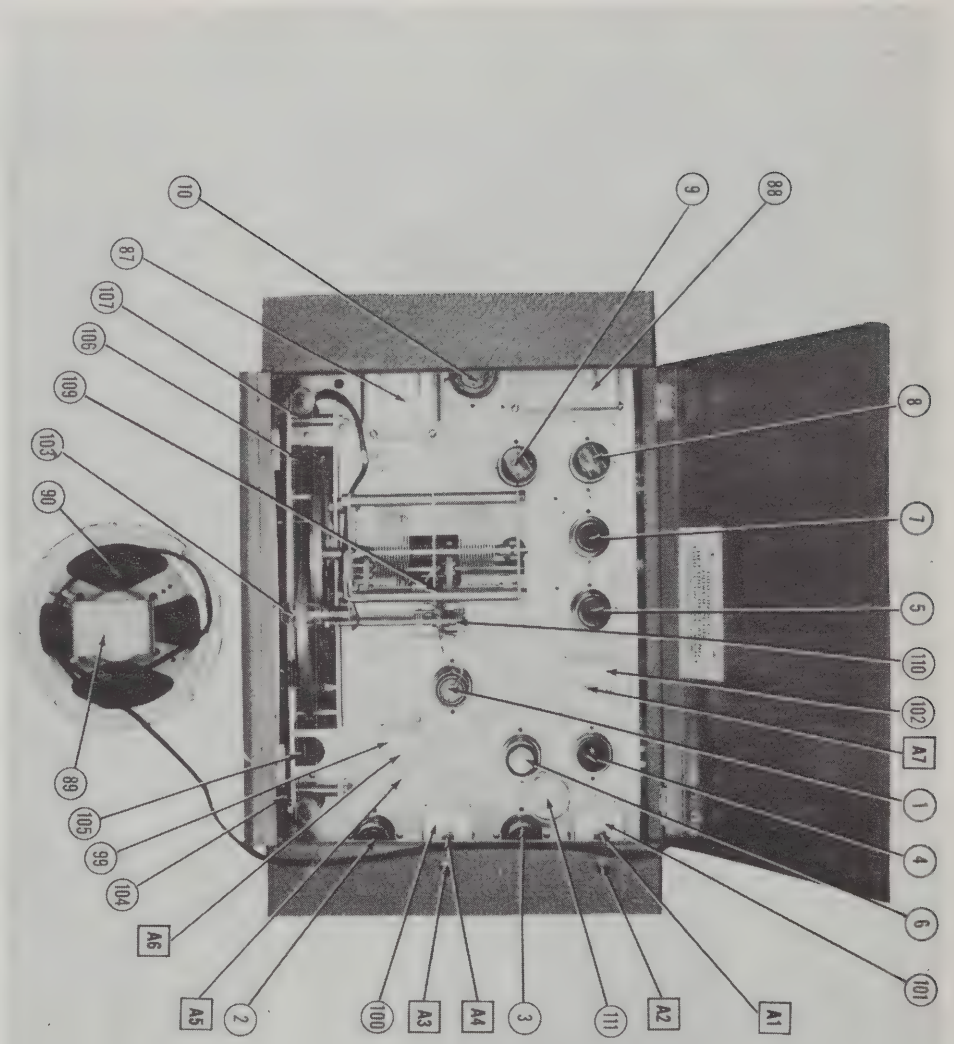
*Not Used in all Models.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: NATIONAL PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
50A	500KΩ	1		MR48#	D13-133#	M-60-Z#	Volume Control & B+ Switch
B	Shaft			Not Req.	A	Not Req.	Attach to 50A per instructions
C	Switch			M26	41	SW-A	" " " " "
51A	10KΩ	1.5		G	W-10K	P-58-S-10K	Sensitivity Control & AC Switch
B	Shaft			Not Req.	A		Attach to 51A per instructions
C	Switch			6-9	41		" " " " "

#Use ground lug supplied with control for shell bypass and original insulating sleeve to isolate control from chassis.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	NATIONAL PART No.	IRC PART No.	
52	47 KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
53	10KΩ	½		BTS-10K	Br.-Blk.-Or. Oscillator Plate Load
54	220Ω	½		BW-½-220	Red-Red-Br. Converter Cathode
55	1000Ω	½		BTS-1000	Br.-Blk.-Red Converter Screen Dropping
56	22KΩ	½		BTS-22K	Red-Red-Or. Oscillator Grid
57	1000Ω	½		BTS-1000	Br.-Blk.-Red Converter Plate Dropping
58	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
59	560Ω	½		BTS-560	Grn.-Blue-Br. 1st IF Cathode
60	22KΩ	½		BTS-22K	Red-Red-Or. 1st IF Screen Dropping
61	1000Ω	½		BTS-1000	Br.-Blk.-Red 1st IF Plate Decoupling
62	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
63	560Ω	½		BTS-560	Grn.-Blue-Br. 2nd IF Cathode
64	22KΩ	½		BTS-22K	Red-Red-Or. 2nd IF Screen Dropping
65	2200Ω	½		BTS-2200	Red-Red-Red 2nd IF Plate Decoupling
66	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Noise Limiter Filter
67	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Diode Load
68	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Noise Limiter Diode Load
69	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Diode Load
70	3700Ω	½		BTS-3900	Or.-Vi.-Red 1st AF Cathode
71	270KΩ	½		BTS-270K	Red-Vi.-Yl. 1st AF Plate Load
72	270KΩ	½		BTS-270K	Red-Vi.-Yl. 2nd AF Grid
73	270KΩ	½		BTS-270K	Red-Vi.-Yl. 2nd AF Plate Load
74	68Ω	½		BW-½-68	Blue-White-Blk. Output Cathode
75	270KΩ	½		BTS-270K	Red-Vi.-Yl. Output Grid
76	270KΩ	½		BTS-270K	Red-Vi.-Yl. Output Grid
77	5Ω	5		AB-5	Headphone Shunt
78	100KΩ	½		BTS-100K	Br.-Blk.-Yl. BFO Plate Dropping
79	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Bleeder
80	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Bleeder
81	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Network
82	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. AVC Load
83	22KΩ	½		BTS-22K	Red-Red-Or. AVC Amplifier Cathode
84	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn. AVC Amplifier Grid
85	100Ω	½		BW-½-100	Br.-Blk.-Br. Detecter-Limiter Filament Shunt
86	33KΩ	½		BTS-33K	Or.-Or.-Or. Bleeder

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	NATIONAL PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
87	20 MA	270Ω	10 Henries		C-1355†	T20C53†	†Drill new mounting hole.

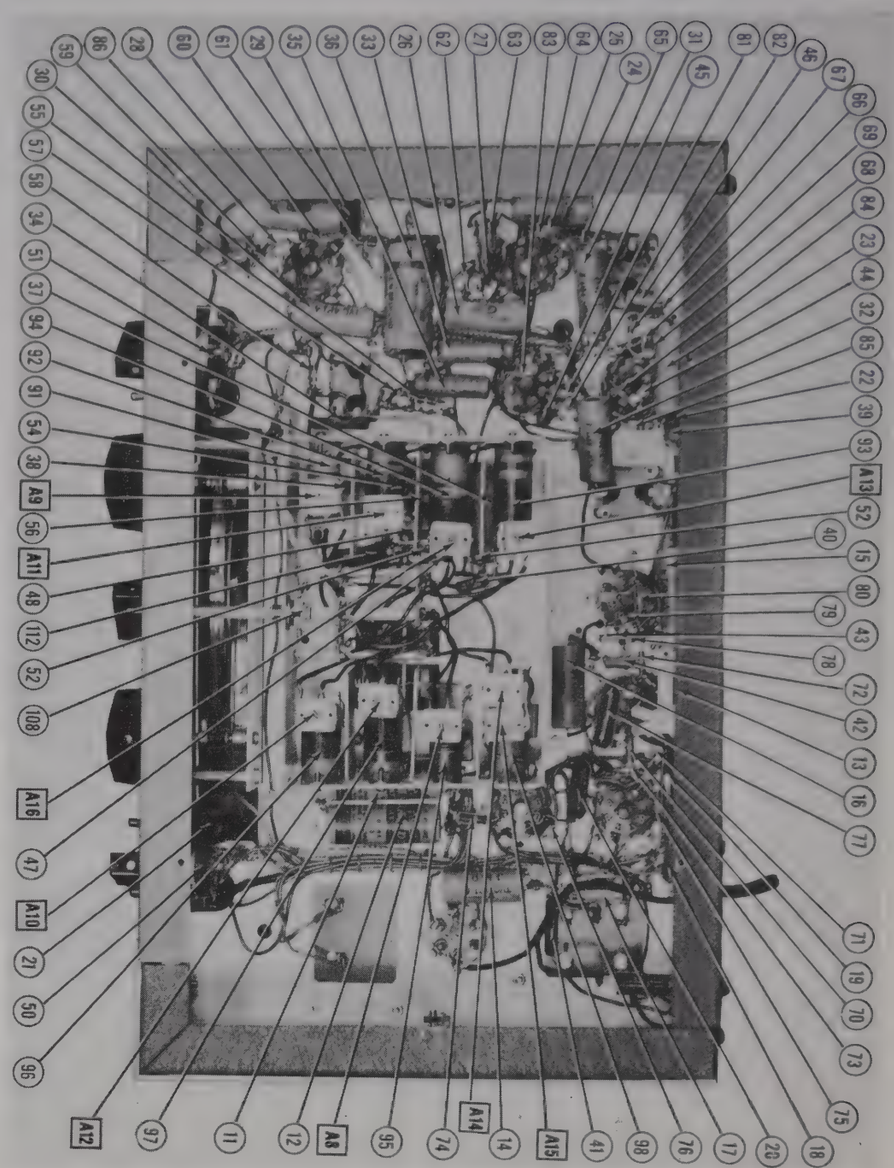
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		NATIONAL PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
88	1500Ω CT	3.4Ω	65Ω CT	.4Ω					

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			NATIONAL PART No.	JENSEN PART No.		
89	FIELD	VC IMP.		ST-111		
	PM	3.4Ω		Mod. P6-V		
90	CONE DIA.	VC DIA.	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			
	6"	5/8"				

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	NATIONAL PART No.	MEISSNER PART No.	
91	Ant. Coil-Bnd. D	3Ω	5Ω			
92	" " " C	1.5Ω	.8Ω			
93	" " " B	.5Ω	.2Ω			
94	" " " A	.1Ω	0Ω			
95	Osc. Coil-Bnd. D	.8Ω	2.6Ω			
96	" " " C	1.6Ω	.8Ω			
97	" " " B	.5Ω	0Ω			
98	" " " A	0Ω	0Ω			
99	1st IF Trans.	2Ω	2Ω	SA-3363		
100	2nd " "	2Ω	2Ω	SA-3363		
101	3rd " "	2Ω	2Ω	SA-3363		
102	BFO Trans.			SA-3364		
111	AVC Induct.	46Ω				

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					NATIONAL PART No.		
103	Screw	115	.05				Type C-7

MISCELLANEOUS

ITEM No.	PART NAME	NATIONAL PART No.	NOTES
104	Limiter Switch		On-Off
105	AVC Switch		"
106	BFO Switch		"
107	Tone Switch		
108	Band Switch		
109	Tuning Cap.		2 Gang Variable Cap.
110	Bandspread Gang		

CONTROLS

The MAIN TUNING control knob is located to the left of the center of the front panel. This knob operates a two gang variable capacitor through a 30 to 1 radio reduction drive mechanism. The main tuning dial is the full vision slide rule type and features four accurate scales calibrated in megacycles which are easily and quickly read.

The ELECTRICAL BANDSPREAD control knob is located to the right of the center of the front panel. This knob operates a separate two gang variable capacitor to provide bandspread tuning. Thres is a separate scale and pointer provided for accurate logging of bandspread channels.

The BAND SELECTOR switch is located at the center of the front panel and functions to select the tuning band desired. The band in use is indicated by the designating letters on this switch dial. The four tuning scales on the main tuning dial are marked at either end of the dial by these designating letters.

Tuning is accomplished by the following steps:
(a) Select the band to be used by means of the BAND SELECTOR switch.
(b) The frequency calibration of the main tuning dial will only be correct with the bandspread pointer set at 90. After this setting has been made the MAIN TUNING control knob is used to tune in the desired station. The bandspread pointer may then be used to give greater accuracy in logging.

The TONE CONTROL switch is located at the upper left-hand side of the receiver and functions to select the frequency characteristic of the audio amplifier as desired, i.e. HIGH or LOW. The HIGH position will give the better fidelity and the LOW a better signal to noise ratio.

The C.W.O. CONTROL switch is located to the right of the TONE CONTROL switch functioning to switch on or off the beat frequency oscillator.

The VOLUME control is located to the left of the MAIN TUNING knob functioning to adjust the audio amplification of the receiver. Part of this control is a stand-by switch permitting the AC line switch to remain on but with B supply circuit open.

The LIMITER CONTROL switch is located at the upper right-hand side of the front panel functioning to switch "On" or "Off" the noise limiter. This control is normally in the "Off" position but can be turned "On" to suppress any undesired noise pulses.

The AVC CONTROL switch is located to the left of the LIMITER switch functioning to switch the automatic volume control circuits into or out of the receiver circuits.

The SENSITIVITY control is located to the right of the BANDSPREAD control knob and functions to adjust the amplification of the two I.F. amplifier tubes. Incorporated in this control is the power supply "ON" "OFF" switch; with this switch in the "Off position the receiver is inoperative.

There is a B.S.W. terminal panel provided at the rear of the receiver to permit remote stand-by control. The terminals are connected in series with the B switch.

CONTROLS SET AS FOLLOWS: VOLUME AND SENSITIVITY CONTROLS "FULL ON", AVC AND LIMITER "ON", TONE SWITCH ON "HIGH", BAND SWITCH AT "D", CWO SWITCH ON FOR 6SJ7 READINGS ONLY.

VOLTAGE READINGS

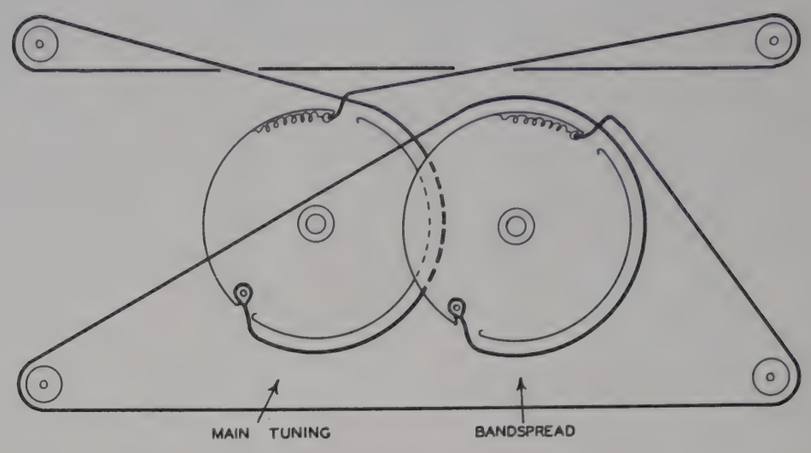
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6K8	0V.	17 V.AC	103V.DC	98V.DC	-1.8V.DC	76V.DC	11V.AC	3 V.DC	0V.
2	6SG7	0V.	17 V.AC	1.5V.DC	0V.	1.5 V.DC	57 V.DC	23.5V.AC	103V.DC	
3	6SG7	0V.	30V.AC	1.75V.DC	0V.	1.75V.DC	87 V.DC	23.5V.AC	102V.DC	
4	6H6	0V.	0V.	-1V.DC	0V.	-2 V.DC	0V.	5 V.AC	0V.	
5	6SJ7	0V.	30V.AC	0V.	-3.5V.DC	0V.	-2 V.DC	3.5.V.AC	40V.DC	
6	6SF7	0V.	0V.	15 V.DC	107V.DC	0V.	107V.DC	5 V.AC	11 V.AC	
7	6SC7	0V.	49 V.DC	.3 V.DC	0V.	73V.DC	105V.DC	42V.AC	3.5.V.AC	
8	25L6GT/G	0V.	42 V.AC	112V.DC	107V.DC	.4 V.DC	0V.	70 V.AC	7.1V.DC	
9	25L6GT/G	0V.	95V.AC	112 V.DC	107V.DC	.2V.DC	.3 V.DC	70 V.AC	7.1V.DC	
10	25Z5	95V.AC	117V.AC	117V.DC	117V.DC	117V.AC	117V.AC			

RESISTANCE READINGS

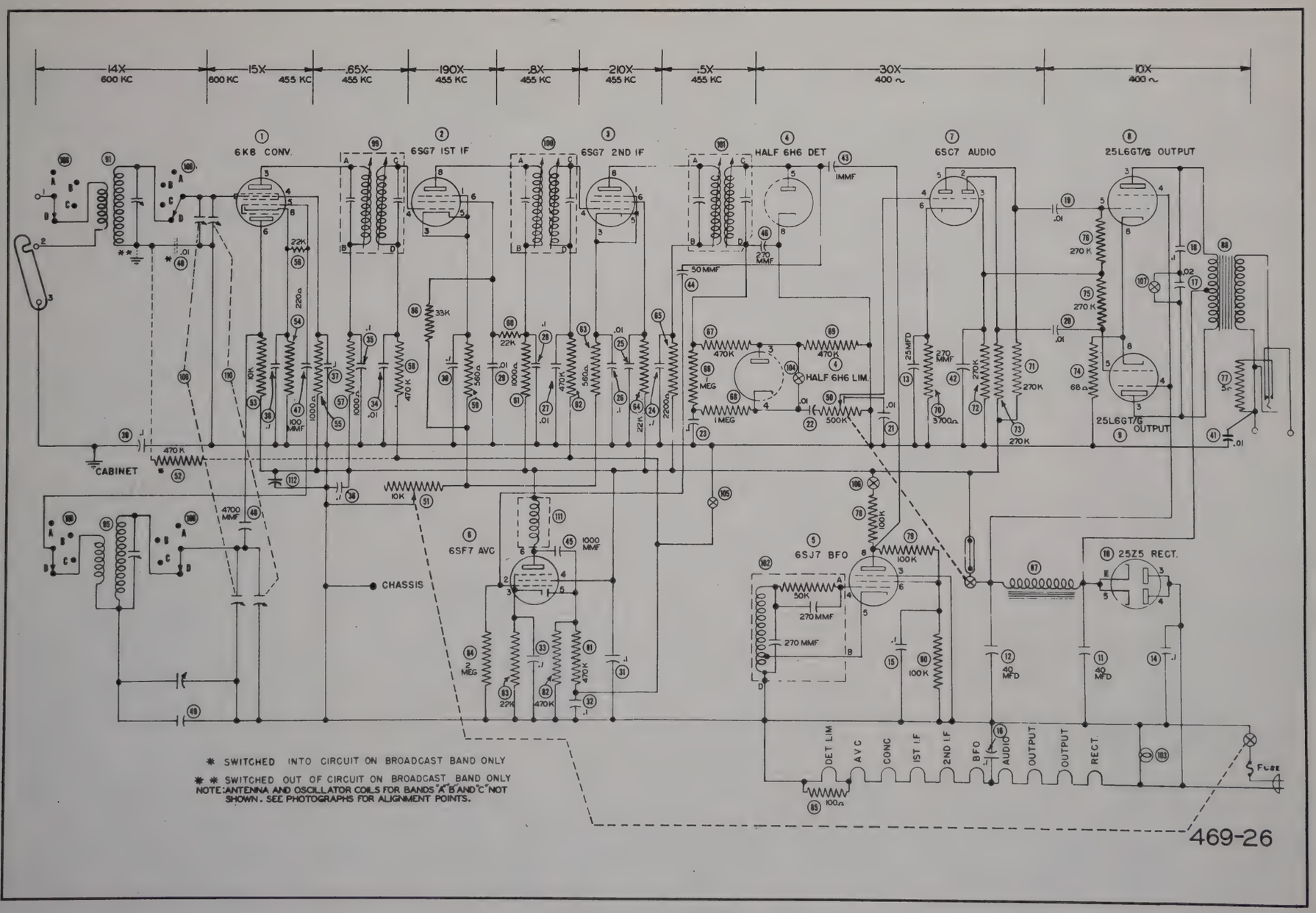
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	6K8	0Ω	11Ω	51KΩ	51KΩ	19.5KΩ	60KΩ	8Ω	225Ω	1.3MEG.
2	6SG7	0Ω	11Ω	510 Ω	1.3MEG.	510Ω	35KΩ	15Ω	51KΩ	
3	6SG7	0Ω	18Ω	490Ω	1.3MEG.	490Ω	73KΩ	15Ω	52KΩ	
4	6H6	0Ω	0Ω	450KΩ	2.7MEG.	875KΩ	1.8MEG.	4Ω	0Ω	
5	6SJ7	0Ω	18Ω	0Ω	43KΩ	.6Ω	95KΩ	22Ω	82KΩ	
6	6SF7	0Ω	1.8MEG.	19.5 KΩ	50KΩ	450KΩ	50KΩ	4Ω	8Ω	
7	6SC7	0Ω	320KΩ	265KΩ	510KΩ	320 KΩ	29KΩ	26Ω	22Ω	
8	25L6GT/G	0Ω	26Ω	50KΩ	50KΩ	530KΩ	INF.	37Ω	58Ω	
9	25L6GT/G	0Ω	49Ω	50KΩ	50KΩ	520KΩ	265KΩ	37Ω	58Ω	
10	25Z5	49Ω	56Ω	50KΩ	50KΩ	56Ω	56Ω			

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

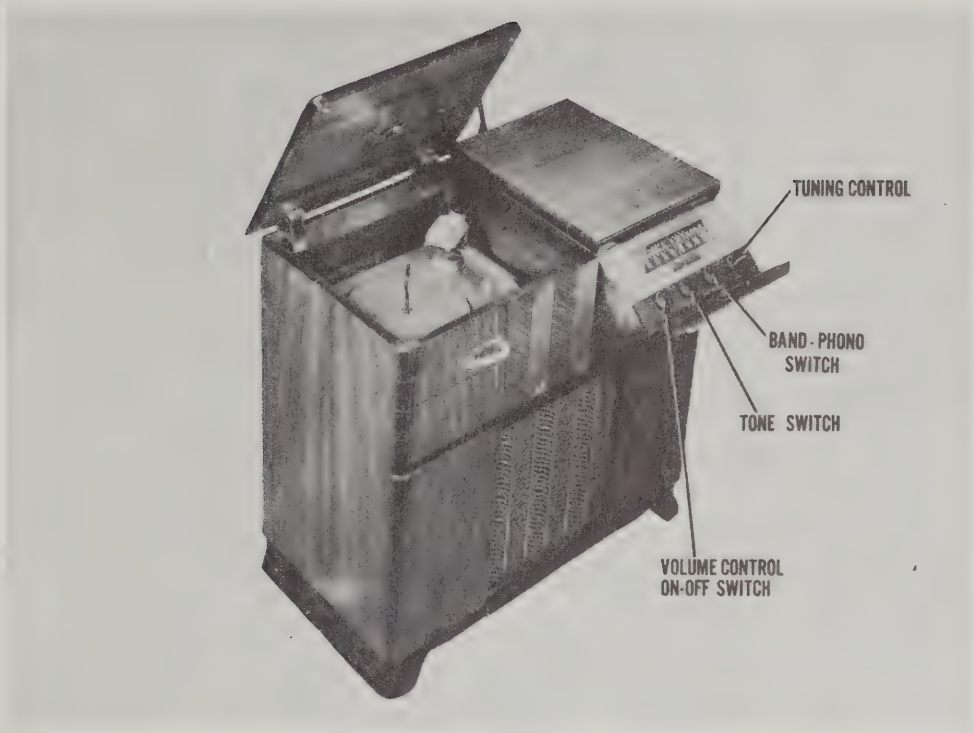
1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.



DIAL CORD DRIVE



The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by turning AVC switch to off position. Sensitivity control set at maximum.



RCA VICTOR MODEL 67AV1

TRADE NAME	RCA Victor Models 67V1, 67AV1 (Chassis No. RC-606)
MANUFACTURER	Radio Corp. of America, RCA Victor Division - Camden, New Jersey
TYPE SET	AC Operated Combination Radio & Automatic Phono. 2 Band Superheterodyne Radio with Self Contained Loop Antenna & Automatic Tuning.
TUBES (SEVEN)	Types, 6SA7 Converter, 6SG7 IF Amp., 6SQ7 Det.-AVC-Phase Inv., 6SQ7 Audio Amp., 2-6K6GT Push-Pull Power Output, 5Y3GT Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .620 Amps. @ 117V AC
TUNING RANGE--BROADCAST	540-1600KC — **SHORT WAVE** 9.2 - 16.0 MC

ALIGNMENT INSTRUCTIONS

To set dial pointer turn gang fully closed and set pointer to second reference mark from left hand end of dial back plate. After adjusting the IF Stages the chassis may be installed in cabinet for balance of alignment or trace dial scale from rear including reference points needed and attach to dial back plate. Chassis must be installed in cabinet when adjusting All. Volume control at maximum volume and output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD	High side to pin #4 of 6SG7. Low side of chassis.	455KC	BC	Low freq.end (Variable fully closed	Across voice coil	A1,A2	Adjust for maximum output
.01 MFD	High side to pin #8 of 6SA7. Low side to chassis.	"	"	"	"	A3,A4.	" " " "
200 MMFD	High side to yellow lead on loop. Low side to chassis.(Link closed)	1400KC	"	1400KC	"	A5	" " " "
200 MMFD	"	600KC	"	600KC	"	A6	Adjust for maximum output Rock gang.
Repeat adjustments on A5 and A6 until no further improvement in output can be obtained.							
47 MMFD	High side to ant. terminal. Low side to chassis.	15.2MC	SW	15.2MC	"	A7,A8	Adjust for maximum output. If two peaks are obtained when adjusting A7, use minimum capacity peak.
47 MMFD	"	9.5MC	"	9.5MC	"	A9,A10	Adjust for maximum output
Repeat adjustments A7, A8, A9 and A10 for maximum output.							
	Loop	1400KC	BC	Tune for max. output of 1400KC signal	"	A11	Adjust for maximum output Radiate signal from loop of few turns of wire.

RCA VICTOR
MODELS 67V1, 67AV1,

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1946 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. A. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc."

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	6SA7	6SA7	8R	
2	IF Amp.	6SG7	6SG7	8BK	
3	Det.-AVC-Phase Inverter	6SQ7	6SQ7	8Q	
4	Audio Amp.	6SQ7	6SQ7	8Q	
5	Power Output	6K6GT	6K6GT	7S	
6	Power Output	6K6GT	6K6GT	7S	
7	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8A	15	450	37888	DY-312	EL-352	AF44J	UP6BJ38	FP390	■ Filter 86031-8
B	15	450							▲ "
C	40	25		M25-25 †	TA-25 †	PRS25-50 †	BR502 †	TC26 †	Cath. Bypass
9	.005	1000	70648	S-16-005	TR-25	1084-005	MD16D5	TP459	SHS Plate Bypass
10	.005	1000	70648	S-16-005	TR-25	1084-005	MD16D5	TP459	" " "
11	.02	600	70632	S-6-02	TC-12	684-02	LT6S2	TP412	Audio Coupling
12	.01	600	70631	S-6-01	TC-11	684-01	LT6S1	TP410	" "
13	.01	600	70631	S-6-01	TC-11	684-01	DT6S1	TP410	Tone Compensation
14	.0025	600	70623	S-6-002	TC-22	684-002	DT6D2	TP405	" "
15	.005	600	70627	S-6-005	TC-25	684-005	DT6D5	TP408	Audio Coupling
17	.0025	600	70623	S-6-002	TC-22	684-002	DT6D2	TP405	" "
18	.0025	600	70623	S-6-002	TC-22	684-002	DT6D2	TP405	Phono Coupling
19	.01	600	70631	S-6-01	TC-11	684-01	DT6S1	TP410	IF Screen Bypass
20	.05	400	70615	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
21	.015	600	71135	S-6-01	TC-11	684-015	DT6S15	TP411	Tone Compensation
22	.1	400	70617	S-4-1	TC-1	484-.1	DT4P1	TP428	Conv. Screen Bypass
23	120	500	71614	MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
24	640	500	71613						Fixed Padder
25	150	500	71612	MOS.5-315	1FM-315	1469-00015	5R5T15	MCB236	" "
26	50	500		MO.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
27	120	500	71614	MO.5-31	1FM-31	1468-0001	5W5T1	MC235	RF Coupling
28	27	500	71615						Fixed Trimmer Cer.
29	150	500	71612	MOS.5-315	1FM-315	1469-00015	5R5T15	MCB236	Fixed Padder

† Parallel bypass sections together.

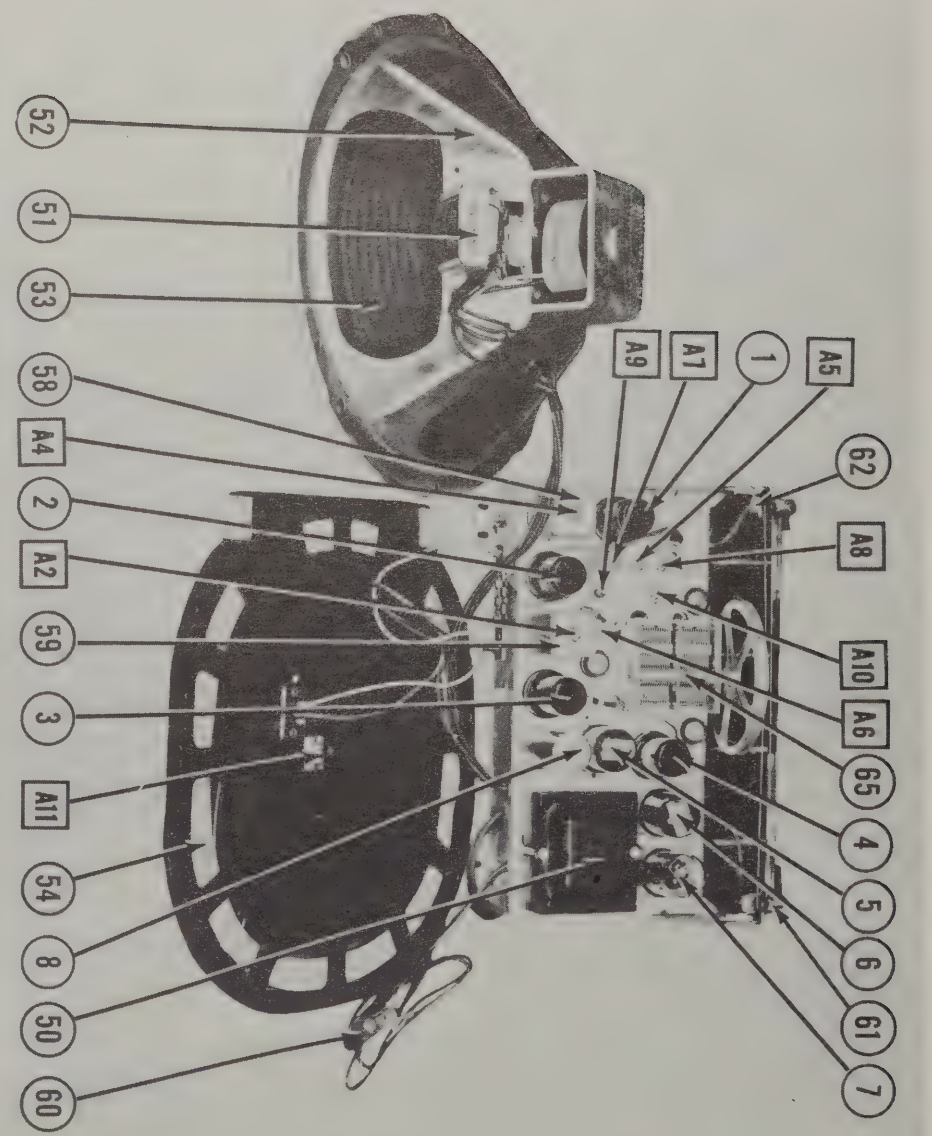
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
30A	1.5 Meg	1	70342	DTM291	D18-137XX	T-95	Volume Control-Orig. Part No. 72788-119
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 30A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	IDENTIFICATION CODES
31	22KΩ	½	30492	BTS-22K	Red-Red-Or. Oscillator Grid
32	22KΩ	2	46925	BT-2-22K	Red-Red-Or. Converter Screen Dropping
33	2.2 Meg.	½	30649	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
34	100KΩ	½	3252	BTS-100K	Br.-Blk.-Yl. IF Screen Dropping
35	2.2 Meg.	½	30649	BTS-2.2 Meg.	Red-Red-Grn. AVC Network

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
36	270KΩ	½	30651	BTS-270K	Red-Vi.-Yl. Diode Load
37	270KΩ	½	30651	BTS-270K	Red-Vi.-Yl. Audio Voltage Divider
38	27KΩ	½	30409	BTS-27K	Red-Vi.-Or. " " "
39	120KΩ	½	30190	BTS-120K	Br.-Red-Yl. Phono Shunt
40	27KΩ	½	30409	BTS-27K	Red-Vi.-Or. Tone Compensation
41	10 Meg.	½	30992	BTS-10 Meg.	Br.-Blk.-Blue 1st AF Grid
42	270KΩ	½	30651	BTS-270K	Red-Vi.-Yl. " " Plate Load
43	10 Meg.	½	30992	BTS-10 Meg.	Br.-Blk.-Blue Phase Inverter Grid
44	270KΩ	½	30651	BTS-270K	Red-Vi.-Yl. " " Plate Load
45	470KΩ	½	30648	BTS-470K	Yl.-Vi.-Yl. Output Grid
46	470KΩ	½	30648	BTS-470K	Yl.-Vi.-Yl. " "
47	8200Ω	½	14250	BTS-8200	Gray-Red-Red Phase Inverter Voltage Divider
48	10KΩ	½	3219	BTS-10K	Br.-Gray-Or. Tone Compensation
49	470Ω	2	71611	BT-2-470	Yl.-Vi.-Br. Output Cathode

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA RCA PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDARSON PART No.	INSTALLATION NOTES
50	117V AC @.620A	700V CT @.070A	5.1V AC @1.9A	6.5V AC @2.0A	31380	P-6011 ‡	T-22R02 ‡	‡ Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA RCA PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.		INSTALLATION NOTES
51	7000Ω CT.	2.3Ω	420Ω CT.	.3Ω	36671	A-3823	T-22S87		Original Part No. 94140-501

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA RCA PART No.	REPLACEMENT DATA JENSEN PART No.		INSTALLATION NOTES
52	FIELD RES. 1000Ω	VC IMP. 2.3Ω	92563-1W	ST-470 * Mod.G12-RS		Field coil part No. 94120-503 * Change output transformer to match 6Ω voice coil.
53	CONE DIA. 12"	VC DIA. 1"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

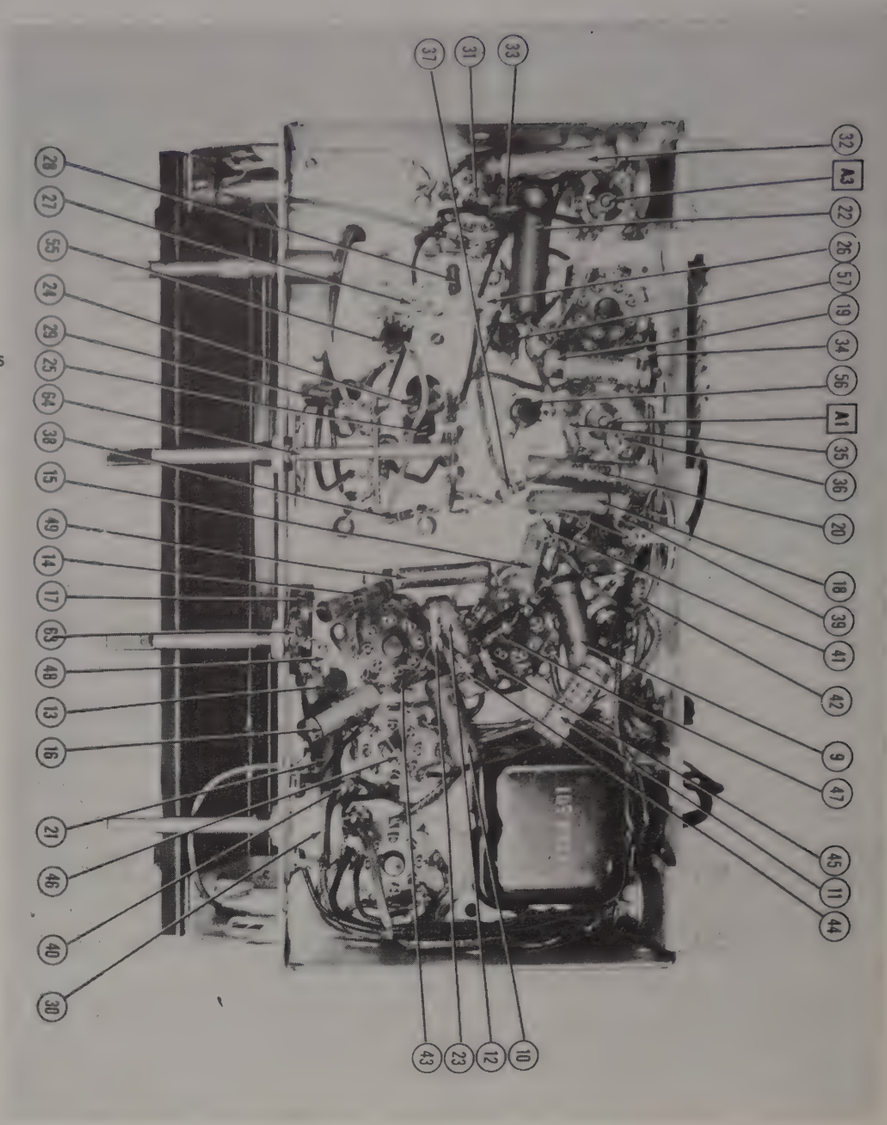
R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA RCA PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
54	Loop Ant.	1.5Ω	65Ω	71613		Original Part No. 70544
55	Ant. Coil	1.8Ω	0Ω	71632		
56	BC Osc. Coil	.1Ω		71633	14-1040	
57	SW " "	.1Ω		71634		
58	Input IF	10.5Ω	11Ω	71625	16-5740‡	
59	Output IF	8Ω	8Ω	71631	16-5742‡	‡ Drill new mounting holes.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA RCA PART No.		INSTALLATION NOTES
60	Bayonet	6-8	0.2	White	11765		Type 51 Dial
61	Bayonet	6-8	0.2	White	11765		Type 51 "
62	Bayonet	6-8	0.4	White	5117		Type 55 Compartment

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

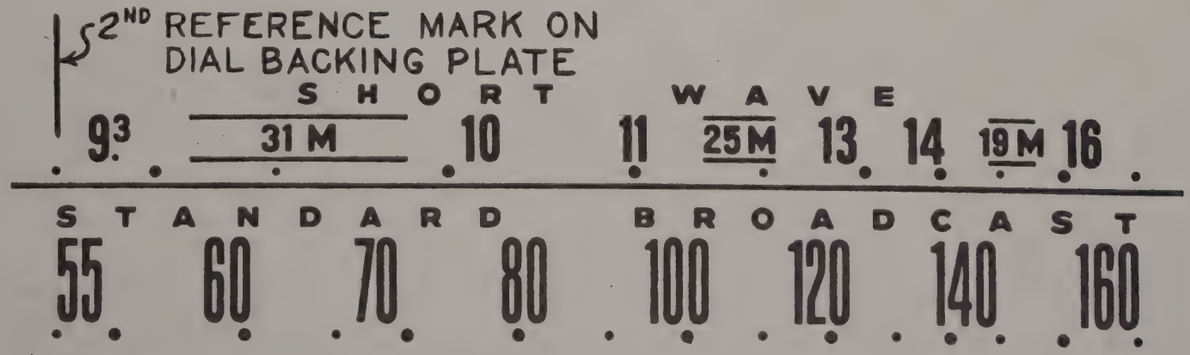
ITEM No.	PART NAME	RCA PART No.	NOTES
63	Tone Switch	71603	
64	Band Switch	71602	
65	Tuning Cap.	71600	2 Gang Variable Cap.
A5	Trimmer Cap.	71610	BC Osc. Adj. 3-80 MMF.
A7	Trimmer Cap.	71610	SW " " " "
A8	Trimmer Cap.	71610	SW Ant. Adj. 3-80 MMF.
A11	Trimmer Cap.	38684	BC Ant. Adj. 2-20 MMF.
	Dial Scale	71817	Glass
	Escutcheon	71816	Less Dial
	Knob	71822	Band Switch or Tone Switch
	"	71821	Volume or Tuning
	Indicator	71608	Station Selector

CRITICAL LEAD DRESS

1. Dress speaker cable leads down next to chassis.
2. Dress output plate capacitors next to chassis.
3. Dress plate lead of output tube away from grid of audio amplifier.
4. Dress all a-c leads away from volume control down next to chassis.
5. Dress resistor (Item 40) away from a-c leads on on-off switch.
6. Dress resistor (Item 32) away from side of chassis.

DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type control knobs.
2. Disconnect the phono-pickup plug from chassis.
3. Disconnect the phono-motor plug.
4. Disconnect speaker receptacle from speaker plug.
5. Disconnect the three loop antenna tip jacks from loop antenna receptacles.
6. Remove two cotter pins from loop antenna brackets. Remove loop antenna.
7. Remove the two wood screws holding the pilot light bracket and shield in the record changer compartment. Slip pilot light and cord through button hole in bottom of cabinet.
8. Loosen terminal screw on terminal strip holding black external antenna lead. Remove black lead.
9. Remove three hex nuts and lock washers from speaker posts. Remove speaker.
10. In order to remove the chassis from the cabinet unscrew the four slotted hex head screws from the two "L" brackets bolted to the rear of the chassis. The chassis may then be slid out toward the bottom rear of the cabinet. Do not remove the hinge screws or the two large nuts in the rear of the chassis. When replacing the chassis, make sure that the tapered pins on the front of the chassis fit into the holes on the metal runners screwed to the cabinet door.



The dial scale drawing shown is a full size reproduction. It can be used as a reference in alignment procedure.

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN STANDARD BROADCAST POSITION.

VOLTAGE READINGS

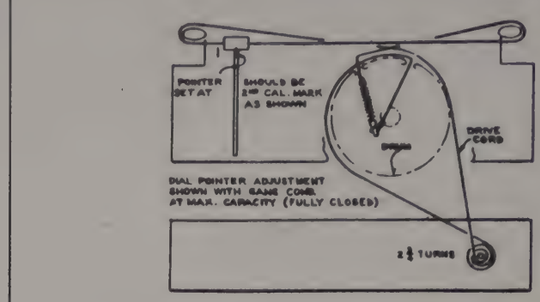
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0V.	0V.	288V.DC	88V.DC	-2.25V.DC	0V.	6.5V.AC	-.1 V.DC
2	6SG7	0V.	0V.	0V.	-.35V.DC	0V.	80V.DC	6.5V.AC	288V.DC
3	6SQ7	0V.	-.6 V.DC	0V.	-.4V.DC	0V.	120V.DC	0V.	6.5V.AC
4	6SQ7	0V.	-.5V.DC	0V.	0V.	0V.	120V.DC	0V.	6.5V.AC
5	6K6GT	0V.	6.5V.AC	285V.DC	288V.DC	0V.	0V.	0V.	23V.DC
6	6K6GT	0V.	0V.	285V.DC	288V.DC	0V.	0V.	6.5V.AC	23V.DC
7	5Y3GT	0V.	362V.DC	0V.	350V.AC	0V.	350V.AC	0V.	362V.DC

RESISTANCE READINGS

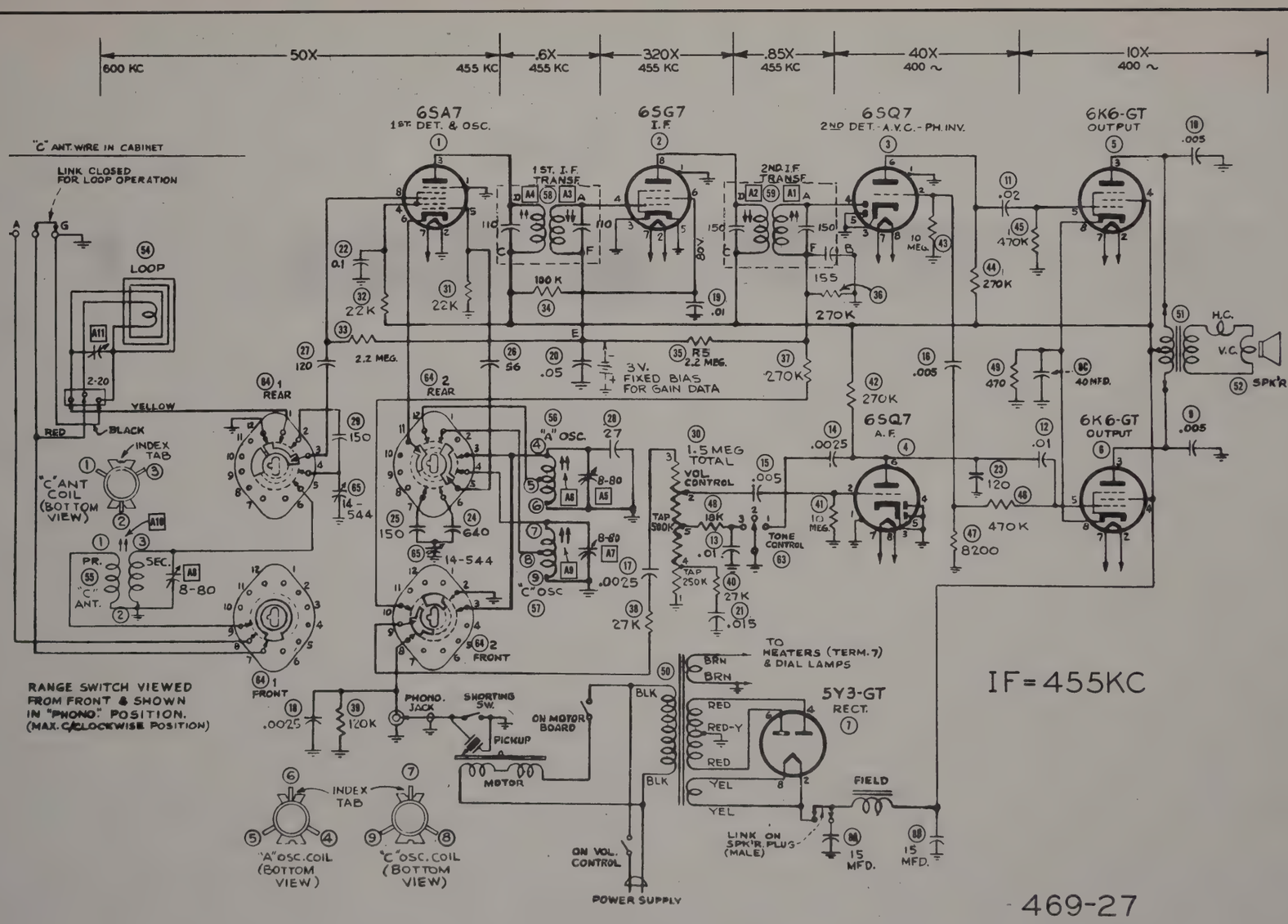
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SA7	0Ω	0Ω	58KΩ	80KΩ	18KΩ	.3Ω	.1Ω	4.5MEG.
2	6SG7	0Ω	0Ω	0Ω	2.2MEG.	0Ω	158KΩ	.1Ω	58KΩ
3	6SQ7	0Ω	10MEG.	0Ω	260KΩ	0Ω	325KΩ	0Ω	.1Ω
4	6SQ7	0Ω	10MEG.	0Ω	0Ω	0Ω	325KΩ	0Ω	.1Ω
5	6K6GT	0Ω	.1Ω	58KΩ	58KΩ	450KΩ	8KΩ	0Ω	400Ω
6	6K6GT	0Ω	0Ω	58KΩ	58KΩ	410KΩ	260KΩ	.1Ω	400Ω
7	5Y3GT	0Ω	55KΩ	INF.	225Ω	INF.	250Ω	INF.	55KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.


POINTER SET AT
SHOULD BE 2ND CAL. MARK AS SHOWN
DRIVE CORD
DRUM
DIAL POINTER ADJUSTMENT SHOWN WITH GANG CONDS. AT MAX. CAPACITY (FULLY CLOSED)
2 1/2 TURNS

DIAL INDICATOR AND DRIVE MECHANISM



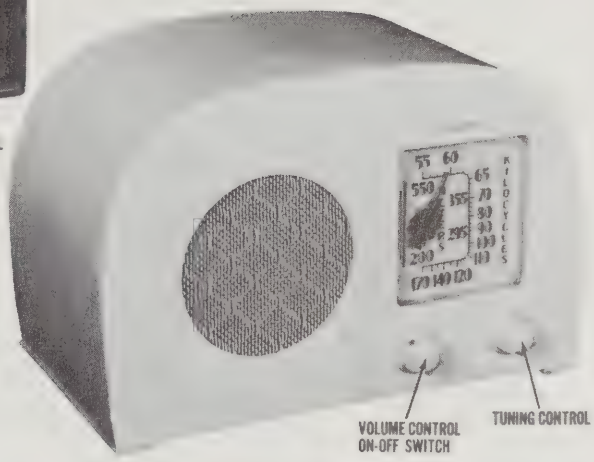
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is ma[illegible] operative and 3-volt battery bias substituted for measurement.

RENARD
MODELS L-1A, PT-1A, 1B5T-1

RENARD
MODELS L-1A, PT-1A, 1B5T-1

MODEL PT-1A



MODEL L-1A

RENARD
MODELS L-1A, PT-1A, 1B5T-1

TRADE NAME	Renard Models L-1A, PT-1A, 1B5T-1
MANUFACTURER	Renard Radio Mfg. Co., Inc., 508 Broadway, New York 12, N.Y.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (FIVE)	Types, 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC-DC
TUNING RANGE—BROADCAST	550-1725KC RATING .225 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn tuning control fully counter-clockwise and set pointer at the last reference mark at the low freq. end of the dial. Use isolation trans. if available. If not, connect capacitor in series with the low side of the signal generator and the chassis. Set volume control at maximum volume and keep output from the signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #8 (signal grid) of 12SA7. Low side to chassis.	455KC	High freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
200 MMF.	High side to ext. ant. Low side to chassis.	1725KC	"	"	A5	Adjust for maximum output.
200 MMF.	"	"	"	"	A6	" " " "
200 MMF.	"	1400KC	Tune for maximum output.	"	Antenna coil	Loosen the two screws holding the ant. coil bracket and adjust the position of the coil for maximum output. Recheck A6 at 1725KC.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: RENARD PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Converter	12SA7GT	12SA7GT	8AD	
2	IF Amp.	12SK7GT	12SK7GT	8N	
3	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
4	Power Output	50L6GT	50L6GT	7AC	
5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RENARD PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
6A	20	150		M-2x20-150	TA-220	PRSA150-20-20	BRL2215	2N509	Filter - Red
B	20	150							" "
7	.05	400		S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
8	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Output Plate Bypass
9	.01	200		S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
10	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	" "
11	.05	400		S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
12	100	500		M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
13	100	500		M0.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Bypass Vol. Cont.
14	100	500		M0.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Bypass Diode
15	100	500		M0.5-31	1FM-31	1468-0001	5W5T1	MC235	Osc. Grid Capacitor

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RENARD PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
16A	500KΩ	1		MR48	D13-133	M-60-Z	Volume Control-See Note 1
B	Shaft			Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch			M26	41	SW-A	" " " "
18A	1 Meg.	1		MR53	D13-137	M-63-Z	Volume Control-See Note 2
B	Shaft			Not Req.	A	Not Req.	Attach to 16A per instructions
C	Switch			M26	41	SW-A	" " " " "

Note 1 - Used in model PT-1A
Note 2 - Used in model L-1A

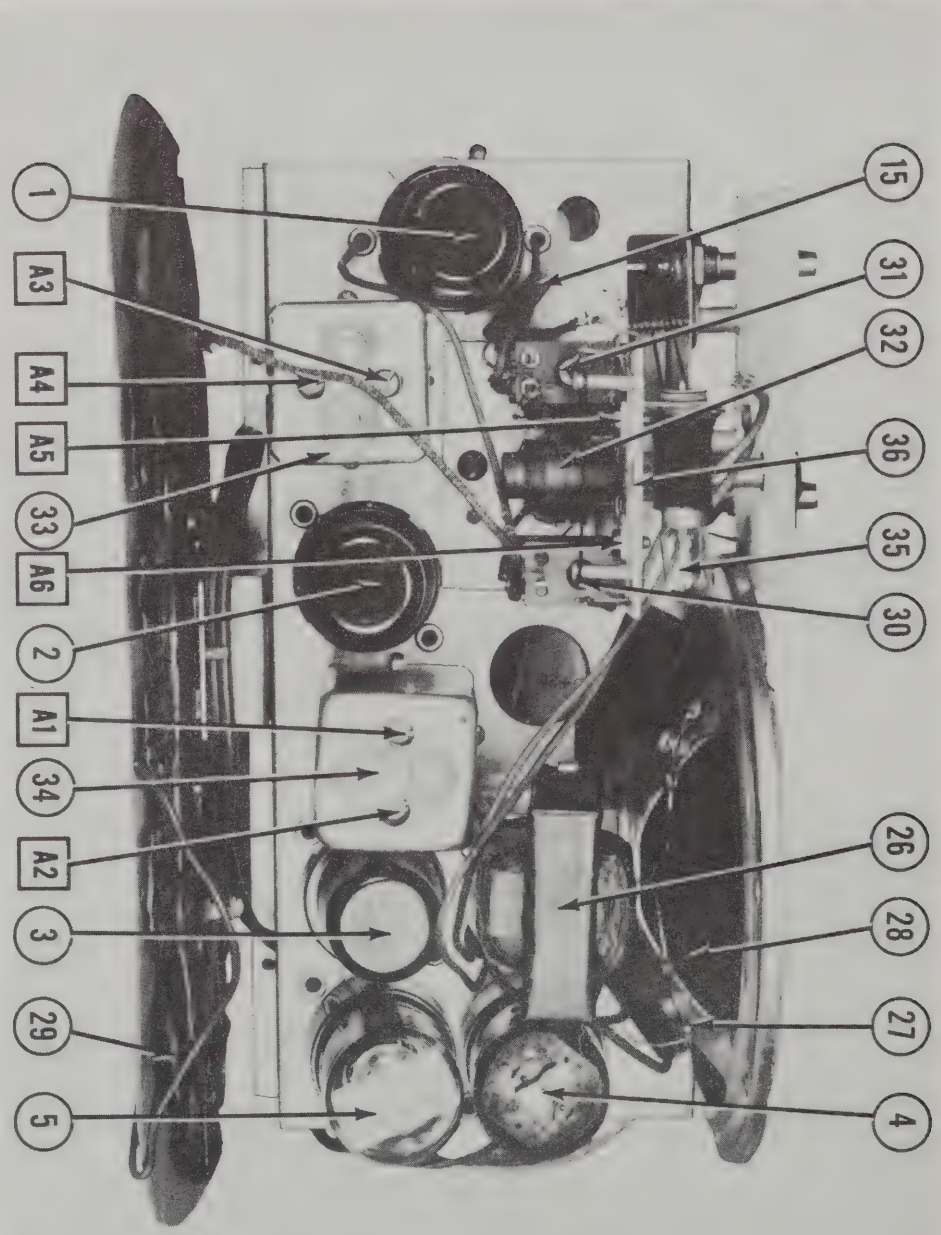
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RENARD PART No.	IRC PART No.	IDENTIFICATION CODES
17	27KΩ	½		BTS-27K	Red-V1.-Or. Oscillator Grid
18A	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network-Model L-1A
18B	3.3 Meg.	½		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network-Model PT-1A
19	27KΩ	½		BTS-27K	Red-V1.-Or. Diode Filter
20A	6.8 Meg.	½		BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Grid-Model L-1A
20B	5 Meg.	½		BTS-4.7 Meg.	Grn.-Blk.-Grn. 1st AF Grid-Model PT-1A
21	270KΩ	½		BTS-270K	Red-V1.-Yl. 1st AF Plate Load
22	500KΩ	½		BTS-470K	Grn.-Blk.-Yl. Output Grid
23	150Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
24	1000Ω	2		BT-2-1000	Br.-Blk.-Red Filter
25	270KΩ	½		BTS-270K	Red-V1.-Yl. 1st IF Transformer Shunt

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: RENARD PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
26A	2000Ω	3Ω	220Ω	.6Ω		A-3876	T-22S45		*Bend mounting tabs down, file out slots and mount on original bracket.
B	1750Ω	3.4Ω	210Ω	.6Ω		A-3876*	T-22S45*		

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: RENARD PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-105		Used in Model PT-1A
27A	PM	3Ω		Mod. P5-X		
B	PM	3.4Ω		ST-105 Mod. P5-W		Used in Model L-1A
	CONE DIA.	VC DIA.				
28A	4-7/8"	1/2"				
B	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

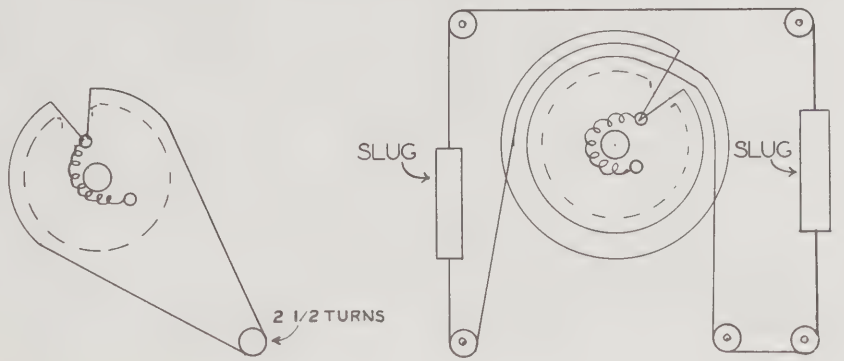
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: RENARD PART No.	MEISSNER PART No.	INSTALLATION NOTES
29	Loop Ant.					
30	Ant. Coil		11.5Ω			Items 30, 31 ganged together and slug tuned. These two items, plus 32, may be obtained as tuning assby.
31	Osc. Coil		3.6Ω			
32	Osc. Padder		3.6Ω			
33	Input IF	14Ω	14Ω	S-103	16-6658	
34	Output IF	14Ω	14Ω	S-104	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: RENARD PART No.		INSTALLATION NOTES
35	Bayonet	6-8	0.15	brown			Type 47

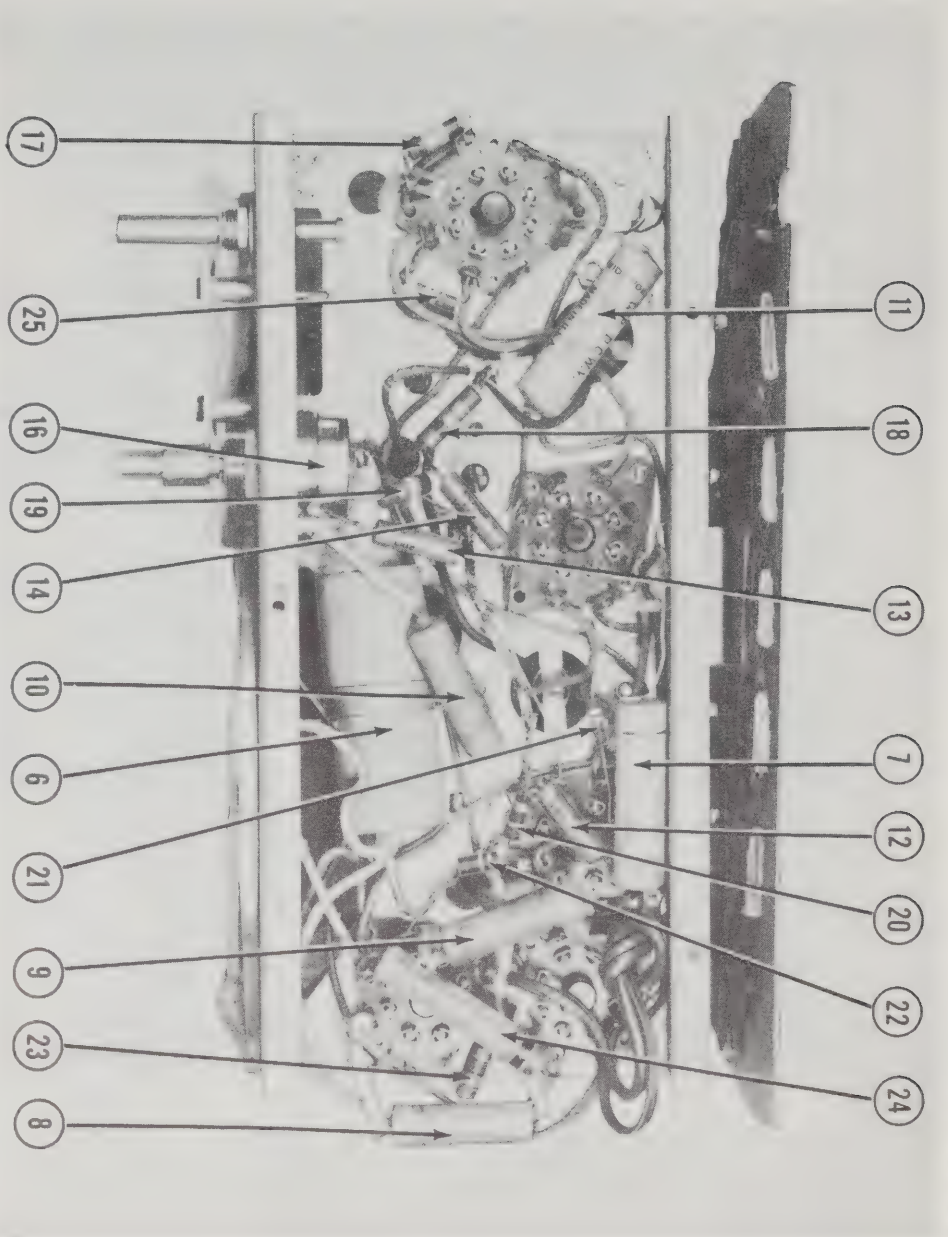
MISCELLANEOUS

ITEM No.	PART NAME	RENARD PART No.	NOTES
36	Tuner Assby.		

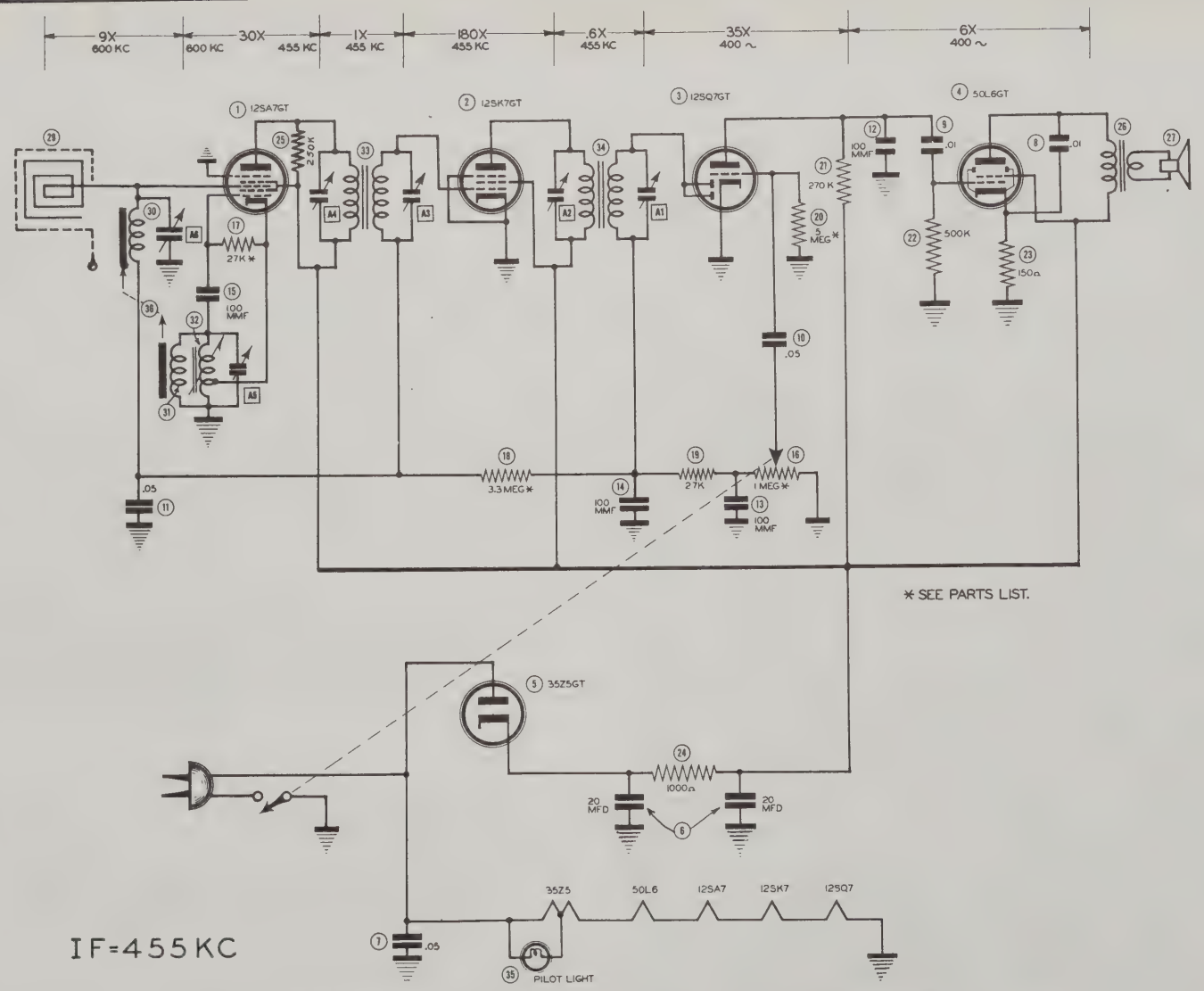


DIAL CORD & PERMEABILITY TUNING DRIVE

CHASSIS—BOTTOM VIEW



RENARD MODELS L-1A, PT-1A, 185T-1



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V	36VAC	70VDC	70VDC	-5.8VDC	0V	24VAC	-6.5VDC
2	12SK7GT	0V	24VAC	0V	-6.5VDC	0V	70VDC	13VAC	70VDC
3	12SQ7GT	0V	-.4VDC	0V	-5.5VDC	-5.5VDC	47VDC	13VAC	0V
4	50L6GT	0V	88VAC	64V	70VDC	0V	0V	36VAC	4.6VDC
5	35Z5GT	0V	117VAC	113VAC	0V	113VAC	0V	88VAC	125VDC

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0Ω	32Ω	30KΩ	30KΩ	25KΩ	.5Ω	22Ω	1.9MEG
2	12SK7GT	0Ω	22Ω	0Ω	1.9MEG	0Ω	30KΩ	11Ω	30KΩ
3	12SQ7GT	0Ω	7MEG	0Ω	975KΩ	975KΩ	280KΩ	11Ω	0Ω
4	50L6GT	0Ω	77Ω	30KΩ	30KΩ	640KΩ	INF	32Ω	130Ω
5	35Z5GT	INF	100Ω	97Ω	INF	97Ω	0Ω	77Ω	30KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-28

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. **DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.**
2. **Socket connections are shown as bottom views.**
3. **Measured values are from socket pin to common negative.**
4. **Line voltage maintained at 117 volts for voltage readings.**
5. **Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.**
6. **Volume control at maximum, no signal applied for voltage measurements.**

SILVERTONE
MODEL 6200A

SILVERTONE
MODEL 6200A

SILVERTONE MODEL 6200A

TRADE NAME	Silvertone Model 6200A (Ch. 101.800-1)
MANUFACTURER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	Battery Operated Superheterodyne Receiver
TUBES (FOUR)	Types, 1LC6 Osc.-Transl., 1LC5 IF Amp., 1LD5 Det.-AVC-AF, 1LB4 Power Output.
POWER SUPPLY	1½ Volt "A" Battery & 90 Volt "B" Battery in Pack Form. (Silvertone "A-B" Battery Pack #6303 or equivalent)
RATING	155 MA @ 1.5V DC; 6MA @ 90V DC
TUNING RANGE—BROADCAST	540-1725KC

ALIGNMENT INSTRUCTIONS

To set pointer, turn tuning control fully counter-clockwise and set pointer at last reference mark at the left end of the dial. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #6 (signal grid) of 1LC6. Low side to B-.	455KC	Low freq.end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
75 MMF.	High side to ant. terminal. Low side to chassis.	1725KC	1725KC	"	A5	" " " "
75 MMF.	"	"	Tune for maximum output.	"	A6	" " " "
75 MMF.	"	1500KC	1500KC	"	A7	" " " "
75 MMF.	"	"	Tune for maximum output.	"	A8	" " " "
75 MMF.	"	1725KC	1725KC	"	A5,A6	" " " "

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Osc.-Transl.	1LC6	1LC6	7AK	
2	IF Amp.	1LC5	1LC5	7AO	
3	Det.-AVC-AF	1LD5	1LD5	6AX	
4	Power Output	1LB4	1LB4	8AX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
5	10	150	R57054	M-10-150	UT-121	PRS150-12	BR1215	TC42	Pwr. Supp. Bypass
6	.005	400		S-6-005	TC-25	484-005	DT6D5	TP408	Audio Coupling
7	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Audio Screen Bypass
8	.001	600		S-6-001	TC-21	684-001	DT6D1	TP404	Audio Coupling
9	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	IF Screen Bypass
10	.001	600		S-6-001	TC-21	684-001	DT6D1	TP404	Osc. Anode Bypass
11	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Conv. Screen Bypass
12	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
13	250	500		MO.5-325	1FM-325	1468-00025	5W5T25	MC240	Output Plate Bypass
14	50	500		MO.5-45	1FM-45	1468-00005	5W5Q5	MC225	Audio Plate Bypass
15	50	500		MO.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
16	250	500		MO.5-325	1FM-325	1468-00025	5W5T25	MC240	AVC Filter
17	150	500		MO.5-315	1FM-315	1468-00015	5W5T15	MC236	Ant. Coupling

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	1	R57072	MR48	D13-133	M-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 18A per instructions
C	Switch		" "	M27	42	SW-A2	" " " " "

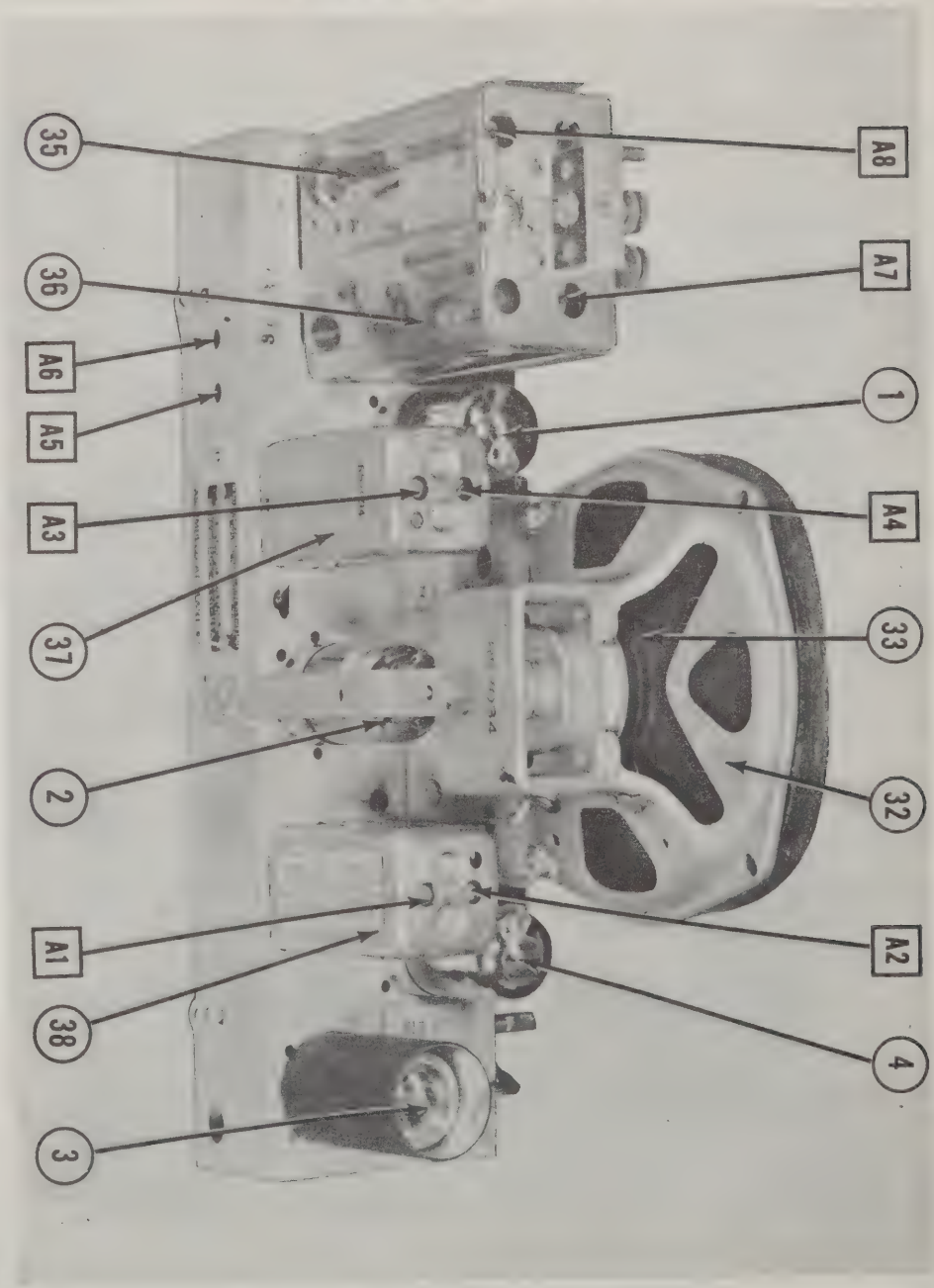
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
19	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
20	47KΩ	1/3		BTS-47K	Yl.-Vi.-Or. Mixer Screen Dropping
21	3.3 Meg.	1/3		BTS-3.3 Meg	Or.-Or.-Grn. AVC Network
22	22KΩ	1/3		BTS-22K	Red-Red-Or. Oscillator Anode
23	180KΩ	1/3		BTS-180K	Br.-Gray-Yl. Oscillator Grid
24	220KΩ	1/3		BTS-220K	Red-Red-Yl. IF Screen Dropping
25	15 Meg.	1/3		BTS-15 Meg.	Br.-Grn.-Blue AF Grid
26	6.8 Meg.	1/3		BTS-6.8 Meg.	Blue-Gray-Grn. AF Screen Dropping
27	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AF Plate Load
28	2.2 Meg.	1/3		BTS-2.2 Meg	Red-Red-Grn. Output Grid
29	1200Ω	1/3		BTS-1200	Br.-Red-Red Bias
30	4700Ω	1/3		BTS-4700	Yl.-Vi.-Red Voltage Dropping

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: THORDAR'N PART No.		INSTALLATION NOTES
31	12000Ω	3.5Ω	620Ω	.2Ω	R57076	A-3879*	T-22S47*		*Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

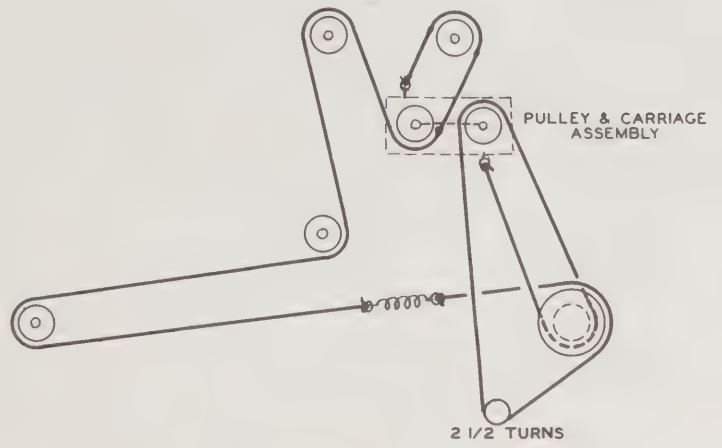
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SILVERTONE PART No.	JENSEN PART No.		
	FIELD	VC IMP.		ST-107		
32	PM	3.5Ω	R57034	Mod. P5-V		
	CONE DIA.	VC DIA.				
33	5"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
34	Ant. Choke	102Ω		R45255		Items 35, 36 ganged together and slug tuned. May be obtained as complete unit under Part No. R57087
35	Ant. Coil		10Ω			
36	Osc. Coil	8Ω	3Ω			
37	Input IF	10.6Ω		R59094	16-5740†	†From low end of secondary add 15 Meg. resistor and 250 MMFD cap. to ground.
38	Output IF	12.5Ω		R57116		

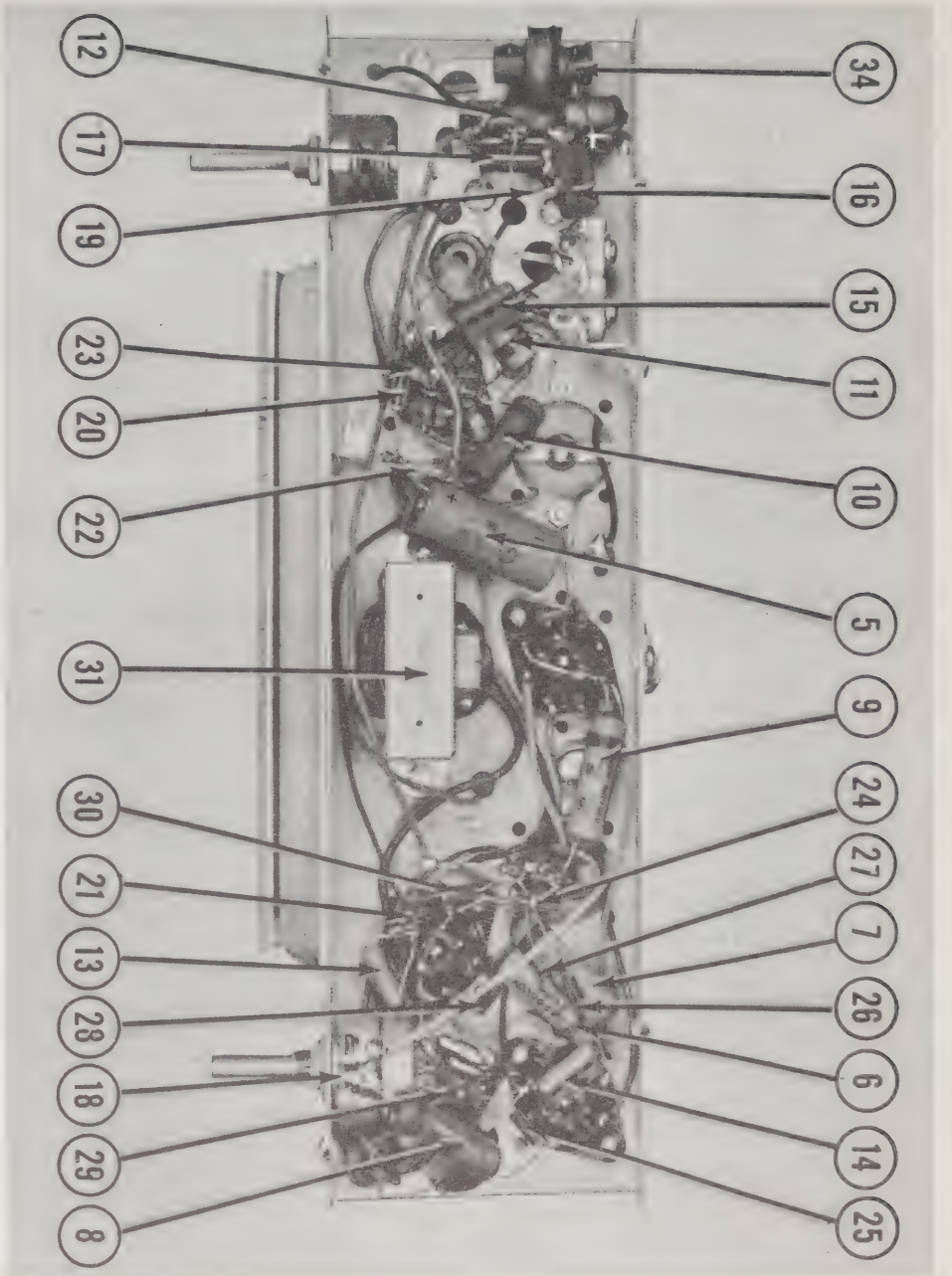
MISCELLANEOUS

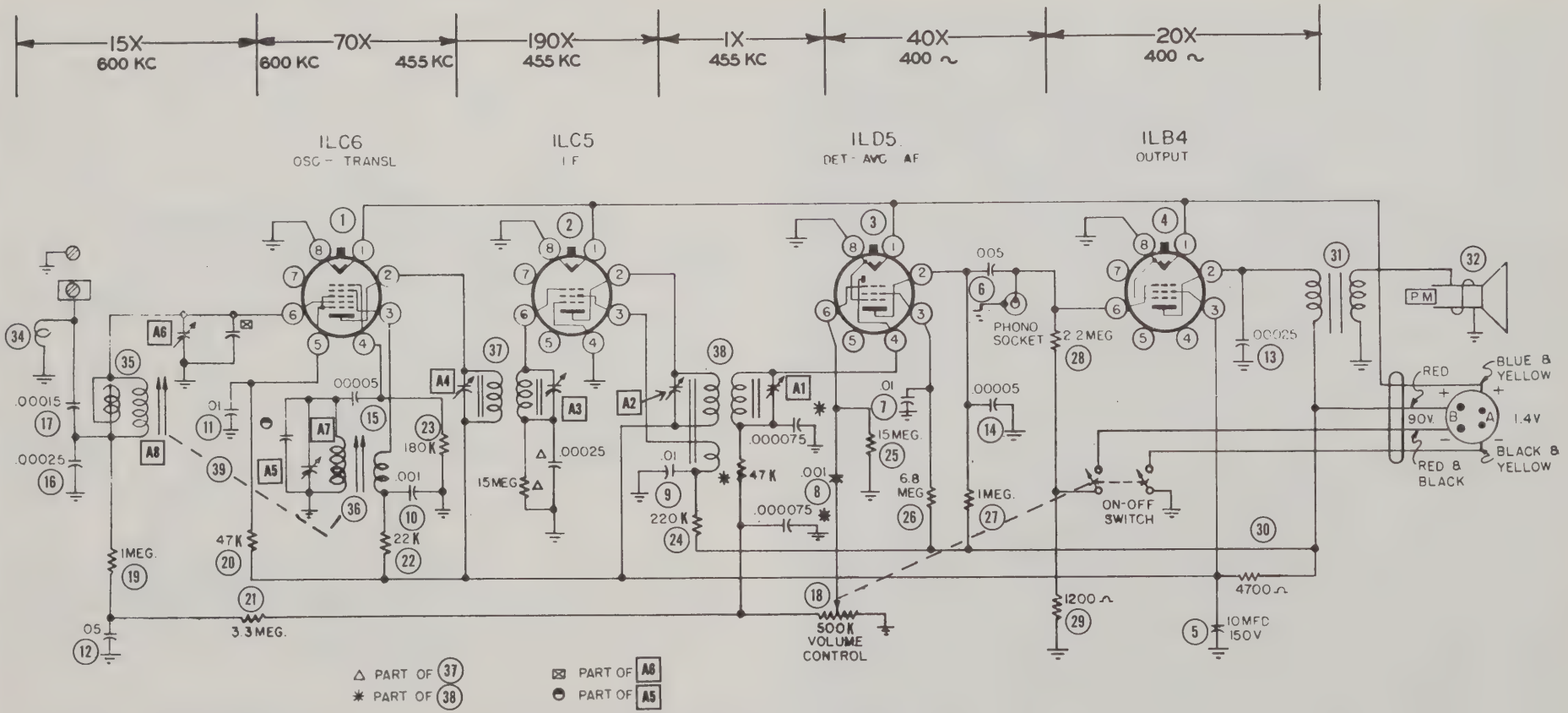
ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
39	Tuner Assby.	R57087	
A5	Trimmer Cap.	R57096	Osc. Adj.
A6			Ant. Adj.
	Dial Cover	R57132	
	Dial	R57084	
	Knob	R57168	On-Off & Volume
	Knob	R57169	Tuning
	Dial Pointer	R57155	



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





IF = 455KC

✱ DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LC6	1.6 V.DC	68V.DC	40V.DC	0 V.	31 V.DC	0V.	0V.	0V.
2	1LC5	1.6 V.DC	68V.DC	37V.DC	0V.	0V.	0V.	0V.	0V.
3	1LD5	1.6 V.DC	33V.DC	20V.DC	.1V.DC	0V.	0V.	0V.	0V.
4	1LB4	1.6 V.DC	87V.DC	68V.DC	0V.	0V.	-1.2V.DC	-9V.DC	0V.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	1LC6	✱	75KΩ	97KΩ	165KΩ	120KΩ	4.0MEG	INF.	0Ω
2	1LC5	✱	75KΩ	290KΩ	0Ω	0Ω	15MEG	INF.	0Ω
3	1LD5	✱	1MEG	6.8MEG	540KΩ	INF.	15MEG	INF.	0Ω
4	1LB4	✱	70KΩ	75KΩ	0Ω	INF.	2.2MEG	1180Ω	0Ω

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-29

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is grounded.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
5 - Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE
MODELS 6220, 6220A

SILVERTONE
MODELS 6220, 6220A

SILVERTONE MODEL 6220A

TRADE NAME	Silvertone Models 6220, 6220A (Ch. Nos. 101.801, 101.801-1A)
MANUFACTURER	Sears, Roebuck & Co., 925 S. Homan St., Chicago, Ill.
TYPE SET	Battery Operated Superheterodyne Receiver
TUBES (FIVE)	Types, 1LG5 RF Amp., 1LC6 Osc.-Transl., 1LC5 IF Amp., 1LD5 Det.-AVC-AF, 1LB4 Power Output.
POWER SUPPLY	1.5 Volt "A" Battery & 90 Volt "B" Battery in Pack Form. (Silvertone "A-B" Battery Pack #6300 or equivalent)
TUNING RANGE—BROADCAST	540-1725KC RATING 230MA @ 1.5V DC; 7.5MA @ 90V DC

ALIGNMENT INSTRUCTIONS

To set pointer, turn tuning control fully counter-clockwise and set pointer at last reference mark at the left end of the dial. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to pin #6 (signal grid) of 1LC6. Low side to chassis.	455KC	Low freq. end.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
75 MMF.	High side to ant. terminal. Low side to chassis.	1725KC	1725KC	"	A5	" " " "
75 MMF.	"	"	"	"	A6, A7	" " " "
75 MMF.	"	1500KC	1500KC	"	A8, A9, A10	" " " "
75 MMF.	"	1725KC	1725KC	"	A5,A6, A7.	" " " "

HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SILVERTONE PART No.	STANDARD REPLACEMENT		
1	RF Amp.	1LG5	1LG5	7AO	
2	Osc.-Transl.	1LC6	1LC6	7AK	
3	IF Amp.	1LC5	1LC5	7AO	
4	Det.-AVC-AF	1LD5	1LD5	6AX	
5	Power Output	1LB4	1LB4	5AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SILVERTONE PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
6A	10	150	R57128	DY-2x10-150	EL-101	AF22F	UP1145	FP217	■ Pwr. Supp. Bypass
B	10	150							▲ " " "
7	.001	600		S-6-001	TC-21	684-001	DT6D1	TP404	Output Plate Bypass
8	.005	400		S-6-005	TC-25	484-005	DT6D5	TP408	Audio Coupling
9	.01	200		S-4-01	TC-11	484-01	DT4S1	TP421	Audio Screen Bypass
10	.001	600		S-6-001	TC-21	684-001	DT6D1	TP404	Audio Coupling
11	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	Pwr. Supp. Bypass
12	.01	200		S-4-01	TC-11	484-01	DT4S1	TP421	Osc. Anode Decoupling
13	.01	200		S-4-01	TC-11	484-01	DT4S1	TP421	Conv. Screen Bypass
14	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
15	.01	200		S-4-01	TC-11	484-01	DT4S1	TP421	Screen Bypass
16	.01	200		S-4-01	TC-11	484-01	DT4S1	TP421	RF Plate Decoupling
17	250	500		M0.5-325	1FM-325	1468-00025	5W5T25	MC240	Tone Compensation
18	50	500		M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Audio Plate Bypass
19	50	500		M0.5-45	1FM-45	1468-00005	5W5Q5	MC225	Osc. Grid Capacitor
20	100	500		M0.5-31	1FM-31	1468-0001	5W5T1	MC235	RF Coupling
21	250	500		M0.5-325	1FM-325	1468-00025	5W5T25	MC240	AVC Filter
22	150	500		M0.5-315	1FM-315	1468-00015	5W5T15	MC240	RF Coupling

CONTROLS

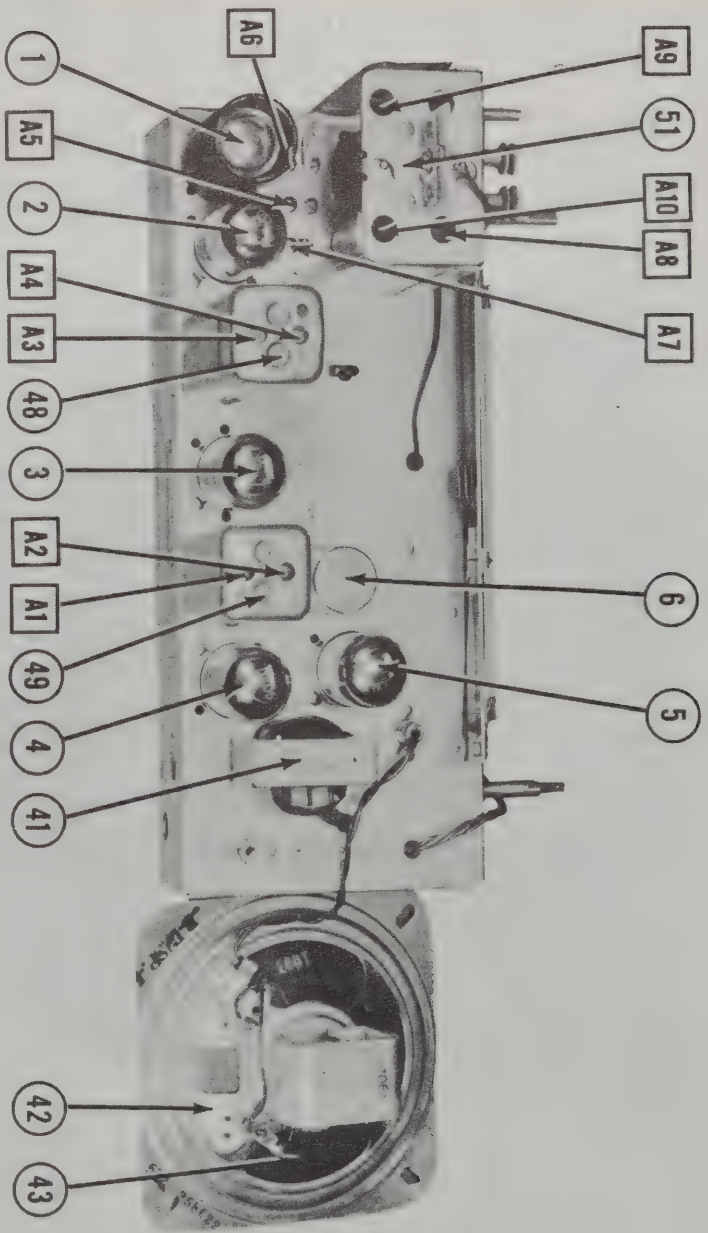
ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	SILVERTONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	
23A	Switch	1	R57071				Tone Switch-Front Section-See Note
B	500KΩ						Volume Control-Center Section-See Note
C	Switch						Off-On Switch-Rear Section-See Note

Note-This is a 3 gang unit operated by concentric shafts.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	
24	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
25	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. Converter Grid
26	3.3 Meg.	1/3		BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
27	68KΩ	1/3		BTS-68K	Blue-Gray-Or. Converter Screen Dropping
28	180KΩ	1/3		BTS-180K	Br.-Gray-Yl. Oscillator Grid
29	33KΩ	1/3		BTS-33K	Or.-Or.-Or. Oscillator Anode
30	680Ω	1/3		BTS-680	Blue-Gray-Br. Voltage Dropping
31	68KΩ	1/3		BTS-68K	Blue-Gray-Or. Screen Dropping
32	2.2 Meg.	1/3		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
33	15 Meg.	1/3		BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
34	6.8 Meg.	1/3		BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Screen Dropping
35	1 Meg.	1/3		BTS-1 Meg.	Br.-Blk.-Grn. 1st AF Plate Load
36	2.2 Meg.	1/3		BTS-2.2 Meg.	Red-Red-Grn. Output Grid
37	.72Ω	1/3		BW-½-.68	Vi.-Red-Silver Battery Saver
38	1800Ω	1/3		BTS-1800	Br.-Gray-Red Battery Saver
39	820Ω	1/3		BTS-820	Gray-Red-Br. Bias
40	680Ω	1/3		BTS-680	Blue-Gray-Br. Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
41	10500Ω	3.4Ω	820Ω	.35Ω	R57075	A-3879*	T-22547*		*Drill one new mounting hole.

SPEAKER

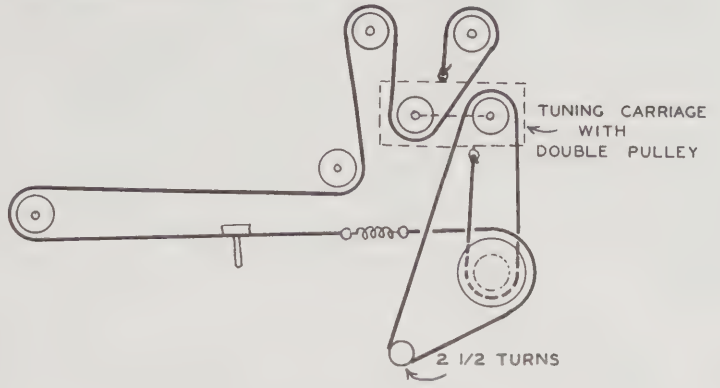
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SILVERTONE PART No.	JENSEN PART No.		
42	FIELD PM	VC IMP. 3.7Ω	R57061	ST-106 Mod. P6-X		
43	CONE DIA. 5¼"	VC DIA. ½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
44	Ant. Choke	102Ω		R45255		
45	Ant. Coil		10.5Ω			Items 45, 46, 47 ganged together and slug tuned; and may be obtained under Part No. R57102.
46	RF Coil		5.5Ω			
47	Osc. Coil	6Ω	3.5Ω			
48	Input IF	10.5Ω		R57120	16-6658†	†From low end secondary add 15 Meg. resistor and 250 MMFD cap to ground.
49	Output IF	12Ω		R57095	16-6670	

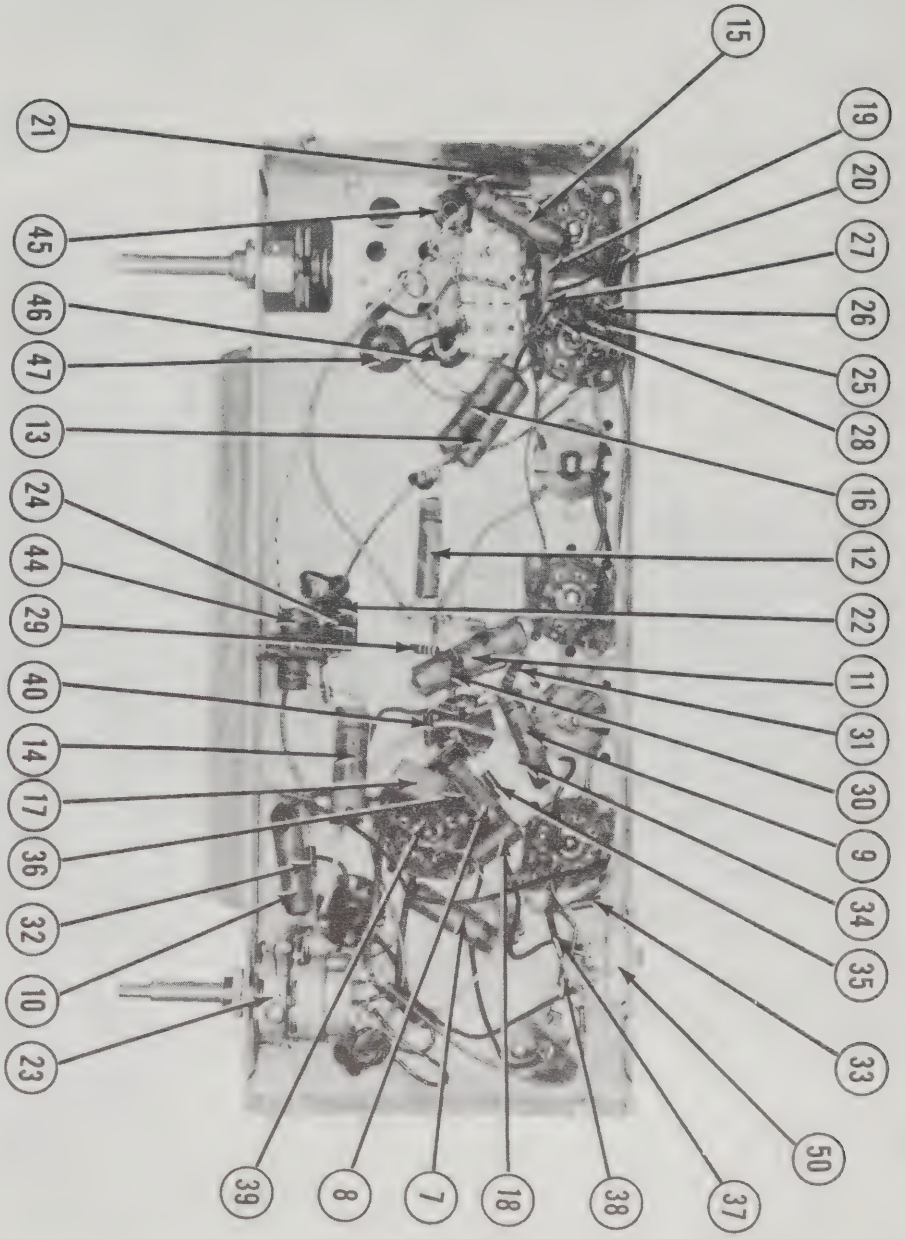
MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
50	Switch	R57038	Thrift (Slide DPST)
51	Tuner Assby.	R57102	Permeability
A5			Osc. Adj.
A6	Trimmer Cap.	R57081	RF Adj.
A7			Ant. Adj.
	Dial Cover	R45218	
	" Station	R57085	
	" Pointer	R57156	
	Knob	R57150	On-Off-Ind. & Volume
	"	R57151	Tuning
	"	R57153	Tone



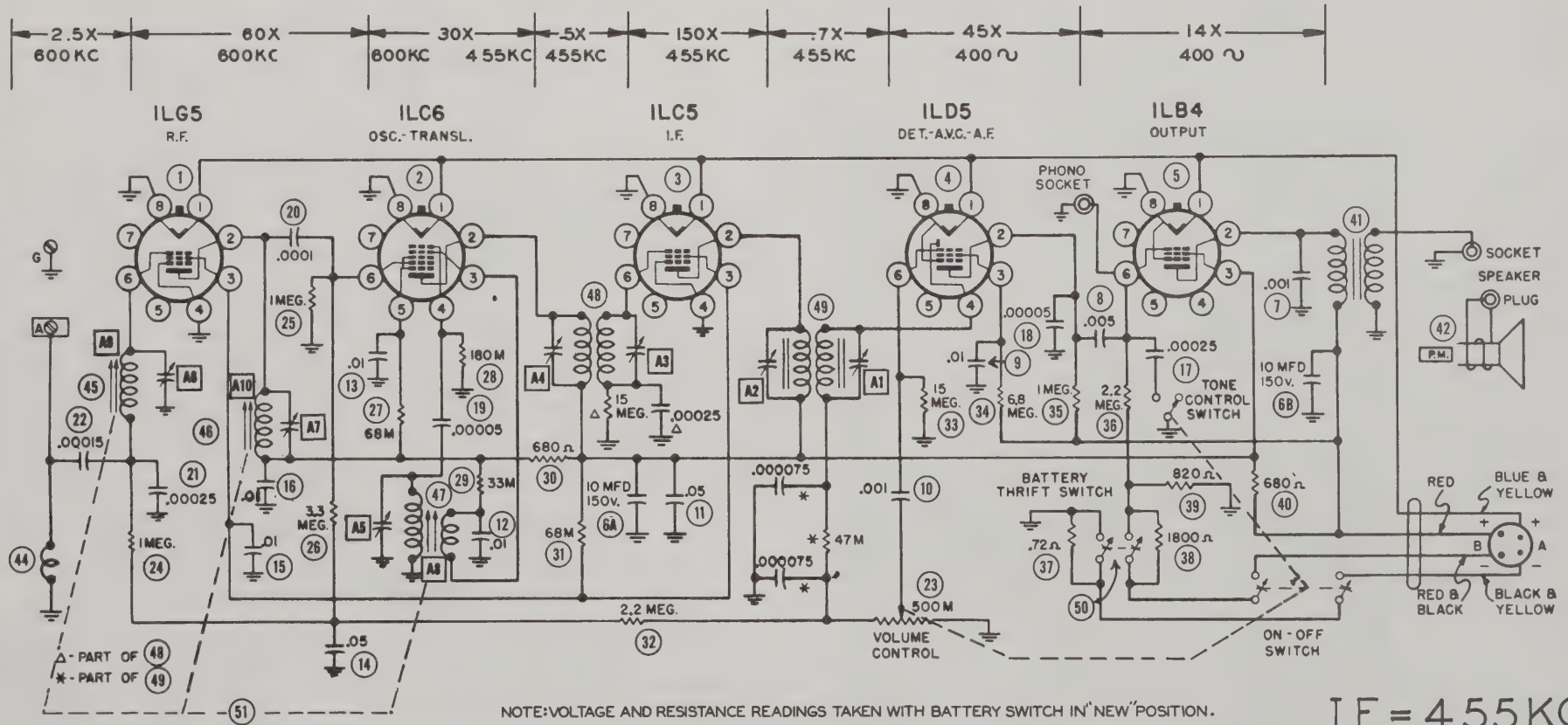
DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



SILVERTONE
MODELS 6220, 6220A

SILVERTONE
MODELS 6220, 6220A



NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN WITH BATTERY SWITCH IN "NEW" POSITION.

IF = 455KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	ILG5	1.4V.DC	70 V.DC	37 V.DC	0V.	0V.	0V.	0V.	0V.
2	ILC6	1.4V.DC	72V.DC	35V.DC	0V.	28 V.DC	0V.	0V.	0V.
3	ILC5	1.4V.DC	72V.DC	37V.DC	0V.	0V.	0V.	0V.	0V.
4	ILD5	1.4V.DC	33V.DC	17V.DC	0V.	0V.	-.1V.DC	0V.	0V.
5	ILB4	1.4V.DC	73V.DC	72V.DC	0V.	0V.	-.7V.DC	-6.5V.DC	0V.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	ILG5	*	40Kn	108Kn	0n	0n	2.5MEG.	2.4MEG.	0n
2	ILC6	*	40Kn	73Kn	160Kn	108Kn	675Kn	1.5MEG.	0n
3	ILC5	*	40Kn	108Kn	0n	0n	7 MEG.	INF.	0n
4	ILD5	*	1 MEG.	6.8MEG.	410Kn	INF.	1.5MEG.	INF.	0n
5	ILB4	*	40Kn	40Kn	0n	0n	2.4MEG.	750n	0n

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

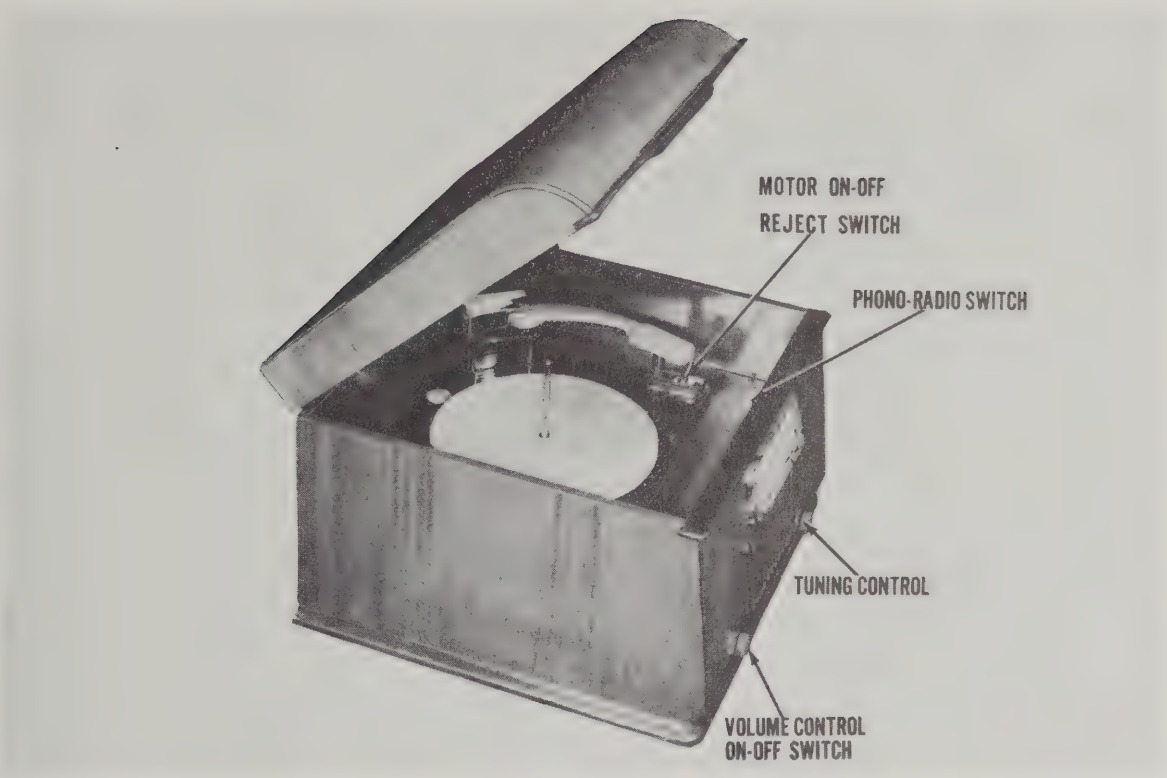
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

469-30

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is grounded.

1 - DC Voltage measurements are at 20,000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
5 - Volume control at maximum, no signal applied for voltage measurements.



SONORA MODEL RKRU-215

TRADE NAME	Sonora Model RKRU-215 (Ch. RKRU)
MANUFACTURER	Sonora Radio & Television Corp., 325 N. Hoyne Ave., Chicago, Ill.
TYPE SET	AC - DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 12BA6 RF Amp., 12BE6 Conv., 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 35L6GT Power Output, 35W4 Rectifier
POWER SUPPLY	110 - 120 Volts AC-DC
TUNING RANGE—BROADCAST	535-1620KC RATING .230 A. @ 117V AC

ALIGNMENT INSTRUCTIONS

Use isolation transformer if available. If not connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.1 MFD.	High side to stator of rear section of tuning gang. Low side to B-.	455KC	High freq.end (Variable fully open)	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy ant. to .001 MFD. to reduce hum modulation.
100 MMF.	High side to ext. ant. Low side to B-.	1620KC	"	"	A5	Adjust for maximum output.
100 MMF.	"	1400KC	Tune for maximum output.	"	A6	" " " "
100 MMF.	"	600KC	"	"		Check alignment of coils.

DISASSEMBLY INSTRUCTIONS

1. Remove the volume control and the tuning control push-on type knobs and felt washers.
2. Remove the two Phillips head screws holding radio-phono switch plate to cabinet. Remove plate and slide switch through the hole in the cabinet.
3. Remove the four Phillips head wood screws holding chassis plate to cabinet.
4. Remove the three hex head machine screws holding chassis to chassis plate. Remove plate.
5. Lift chassis and loop antenna from cabinet.
6. Disconnect the phono-motor plug from chassis.
7. Unsolder pickup leads from radio-phono on-off switch.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: SONORA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	12BA6	12BA6	7BK1	
2	Converter	12BE6	12BE6	7CH	
3	IF Amp.	12BA6	12BA6	7BK1	
4	Det.-AVC-AF	12AT6	12AT6	7BT	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SONORA PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	N-5051	M-2x40-150	TA-440	PRSA150-40-40	BRD4415	2N511	Filter - Red
B	40	150							" - Blue
8	.05	400	N-1346	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
9	.02	400	N-1376	S-4-02	TC-12	484-02	DT4S2	TP423	35L6 Plate Bypass
10	.01	400	N-1344	S-4-01	TC-11	484-01	DT4S1	TP421	Audio Coupling
11	.0005	600	N-4890	S-6-0005	TC-35	1468-0005	DT6T5	TP403	Audio Plate Bypass
12	.005	600	N-4894	S-6-005	TC-25	684-005	DT6D5	TP408	Audio Coupling
13	.09	200	N-4957	S-4-1	TC-1	484-.1	DT4P1	TP428	Phono. Shield Bypas
14	.1	200	N-1351	S-4-1	TC-1	484-.1	DT4P1	TP428	Conv. Screen Bypass
15	.2	200	N-5160	S-4-2	TC-2	484-.2	DT4P2	TP429	Line Isolation
16	.05	200	N-1345	S-4-05	TC-15	484-05	DT4S5	TP426	RF Screen Bypass
17	.05	200	N-1345	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
18	.01	400	N-1344	S-4-01	TC-11	484-01	DT4S1	TP421	Ant. Coupling
19	100	500	N-1374	M0.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Bypass Diode
20	150	500	N-2383	M0.5-315	1FM-315	1468-00015	5W5T15	MC236	RF Coupling

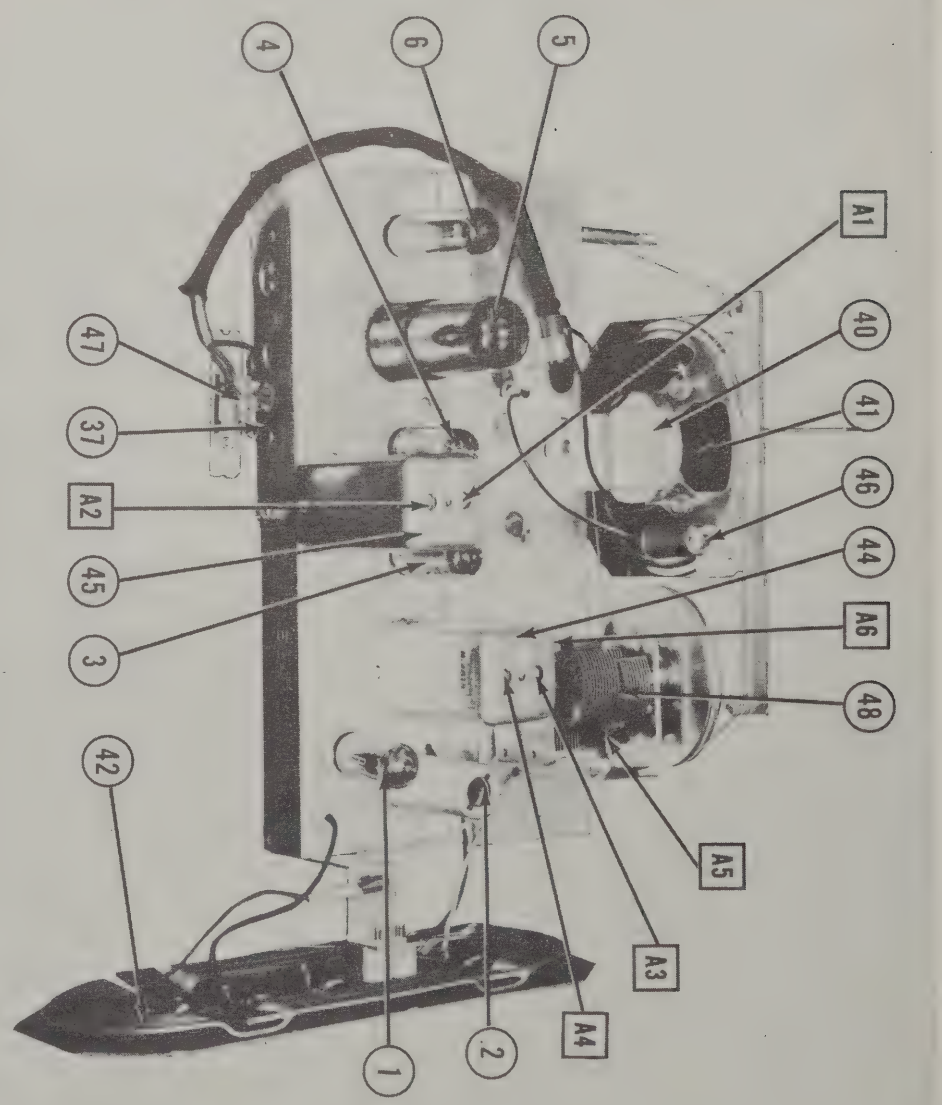
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SONORA PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
21A	500KΩ	1	N-4076	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSS-3	Attach to 21A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SONORA PART No.	IRC PART No.	IDENTIFICATION CODES
22	100Ω	½	N-1615	BW-½-100	Br.-Blk.-Br. RF Cathode
23	22KΩ	½	N-4025	BTS-22K	Red-Red-Or. RF Screen Dropping
24	4700Ω	½	N-4278	BTS-4700	Yl.-Vi.-Red RF Plate Load
25	22KΩ	½	N-4025	BTS-22K	Red-Red-Or. Oscillator Grid
26	15 Meg.	½		BTS-15 Meg.	Br.-Grn.-Blue AVC Network
27	47KΩ	½	N-4063	BTS-47K	Yl.-Vi.-Or. Converter Grid
28	220Ω	½	N-5348	BW-½-220	Red-Red-Br. Decoupling
29	150Ω	½	N-3663	BW-½-150	Br.-Grn.-Br. IF Cathode
30	3.3 Meg.	½	N-4062	BTS-3.3 Meg.	Or.-Or.-Grn. AVC Network
31	47KΩ	½	N-4063	BTS-47K	Yl.-Vi.-Or. Diode Load
32	6.8 Meg.	½	N-4028	BTS-6.8 Meg.	Blue-Gray-Grn. 1st AF Grid
33	220KΩ	½	N-4026	BTS-220K	Red-Red-Yl. 1st AF Plate Load
34	470KΩ	½	N-4027	BTS-470K	Yl.-Vi.-Yl. Output Grid
35	180Ω	½	N-4067	BW-½-180	Br.-Gray-Br. Output Cathode
36	1000Ω	1	N-5358	BTA-1000	Br.-Blk.-Red Filter
37	1 Meg.	½	N-1262	BTS-1 Meg.	Br.-Blk.-Grn. Series Phono.
38	33Ω	½	N-4022	BW-½-33	Or.-Or.-Blk. Surge Limiter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA SONORA PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA THORDAR'N PART No.	REPLACEMENT DATA	INSTALLATION NOTES
39	2100Ω	3Ω	205Ω tapped @ 7.5Ω	.55Ω	N-4375	A-3876*			*Add extra filter to reduce hum level.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA SONORA PART No.	REPLACEMENT DATA JENSEN PART No.	REPLACEMENT DATA	INSTALLATION NOTES
	FIELD	VC IMP.		ST-1131		
40	M1	3Ω	N-4667	Mod. P4-X		†Fabricate new mounting bracket.
	CONE DIA.	VC DIA.				
41	4"	½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

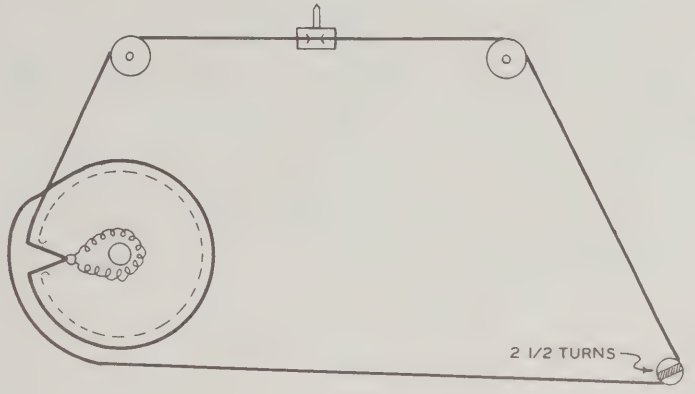
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SONORA PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
42	Loop Ant.	0Ω	1.5Ω	N-5133		
43	Osc. Coil	.8Ω	6.1Ω	N-4810	14-1040‡	‡Add 50 MMF. cap. from osc. grid to high end of tuning cap.
44	Input IF	21Ω	20Ω	N-4813	16-6658	
45	Output IF	20Ω	20Ω	N-5779	16-6660	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA SONORA PART No.	REPLACEMENT DATA	INSTALLATION NOTES
46	Bayonet	6-8	.15	Brown			Type 47

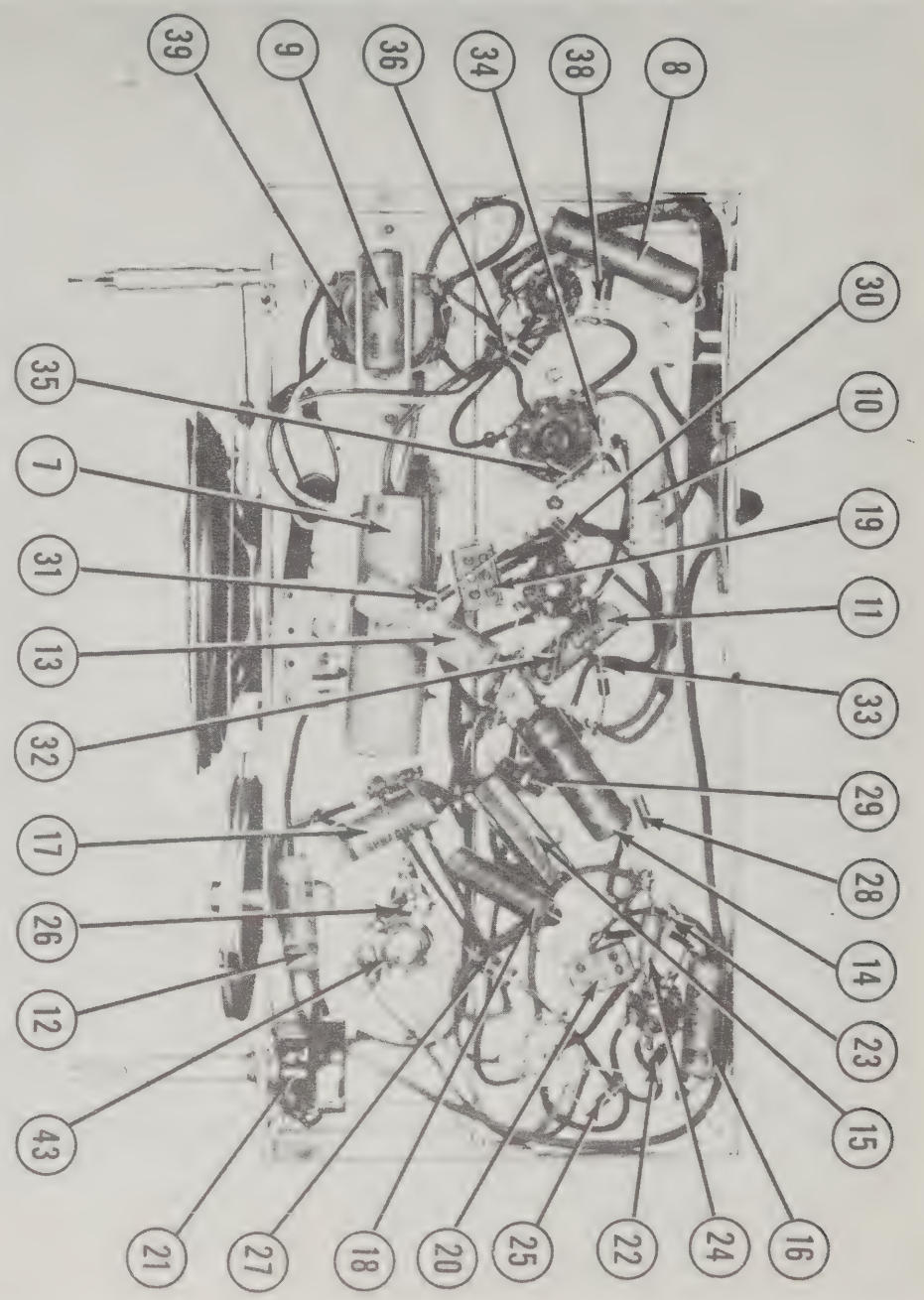
MISCELLANEOUS

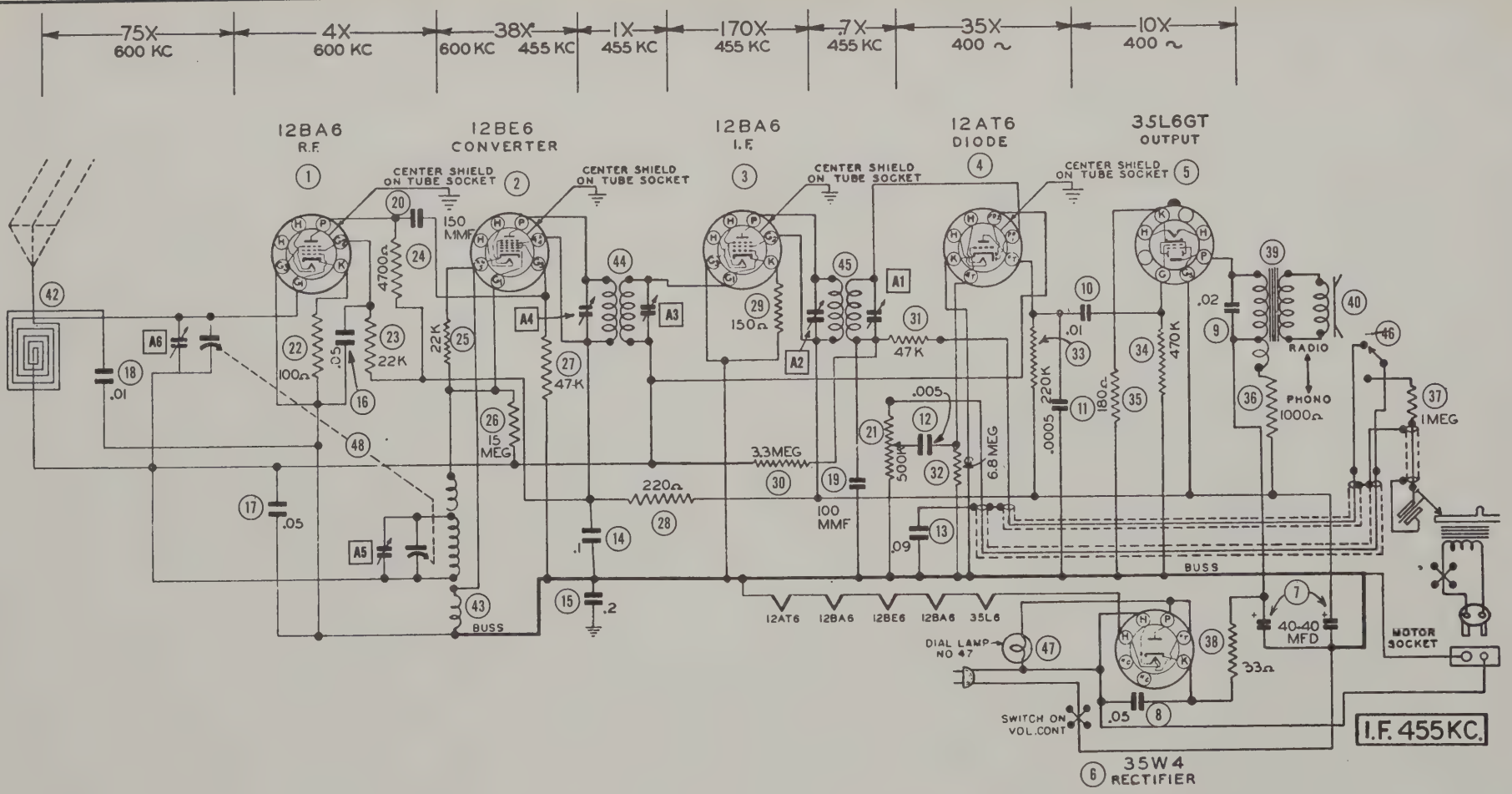
ITEM No.	PART NAME	SONORA PART No.	NOTES
47	Switch	N-2409	Radio-Phono
48	Tuning Cap.	N-4612	2 Gang Variable Cap.



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12BA6	-.35V.DC	0V.	37V.AC	48V.AC	82V.DC	72V.DC	4V.DC	
2	-1.65V DC	-1.65V.DC	0V.	37V.AC	25.5V.AC	94V.DC	94V.DC	0V.	
3	12BA6	-.35V.DC	0V.	25.5V.AC	12.5V.AC	95V.DC	95V.DC	85V.DC	
4	12AT6	-.35V.DC	0V.	12.5V.AC	0V.	-.35V.DC	-.25V.DC	44V.DC	
5	35L6GT	0V.	88V.AC	110V.DC	95V.DC	0V.	0V.	48V.AC	6.6V.DC
6	35W4	0V.	116V.DC	88V.AC	117V.AC	113V.AC	113V.AC	117V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12BA6	3MEG.	0Ω	33Ω	44Ω	180KΩ	197KΩ	98Ω	
2	12BE6	23KΩ	5Ω	33Ω	23Ω	175KΩ	175KΩ	43KΩ	
3	12BA6	3MEG.	0Ω	23Ω	12Ω	175KΩ	175KΩ	130Ω	
4	12AT6	6.5MEG.	0Ω	12Ω	0Ω	3MEG.	470KΩ	395KΩ	
5	35L6GT	INF.	76Ω	175KΩ	175KΩ	450KΩ	0Ω	44Ω	160Ω
6	35W4	INF.	175KΩ	76Ω	102Ω	100Ω	100Ω	175KΩ	

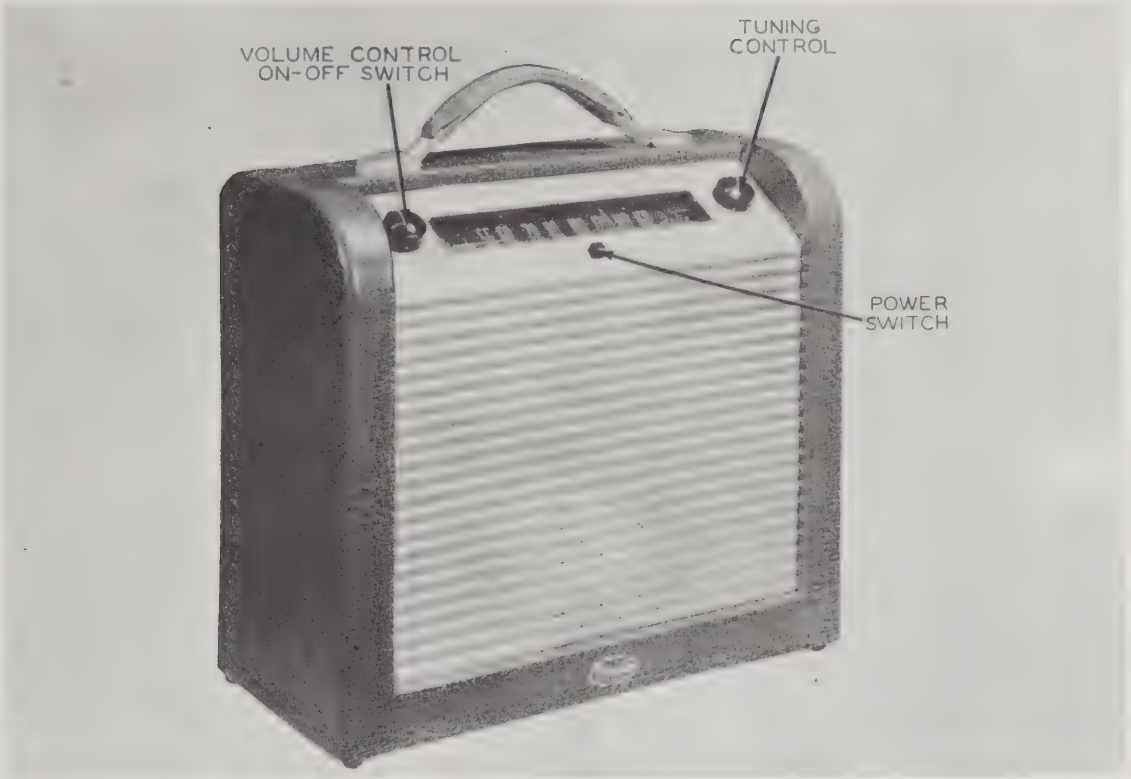
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-31

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



TEMPLE
MODEL F-611

TEMPLE
MODEL F-611

TEMPLE MODEL F-611

TRADE NAME	Temple Model F-611
MANUFACTURER	Templetone Radio Mfg. Corp., 220 East 42nd St., New York 17, N.Y.
TYPE SET	Three Power Portable AC-DC - Battery Superheterodyne Self Contained Loop Antenna
TUBES (SIX)	Types, 1A7GT Converter, 1N5GT 1st IF Amp., 1N5GT 2nd IF Amp., 1H5GT Det.-AVC-AF, 3Q5GT Power Output, 117Z6GT Rectifier
POWER SUPPLY	105-120 Volts AC-DC or 2-4½V "A" Batteries (Eveready Type 746 or Equiv.) & 2-45V "B" Batteries (Eveready Type 482 or Equiv.)
TUNING RANGE—BROADCAST	540-1650KC RATING .185 Amps. @ 117V AC - 56MA @ 9V DC; 9.5MA @ 90V DC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at the last reference mark at the left end of the dial. Use battery power for alignment whenever possible. When using a-c power use isolation transformer if available. If not connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.01 MFD.	High side to grid cap of 1A7. Low side to B-.	455KC	High freq.end	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If a-c power is used without isolation trans., reduce dummy ant. to .001 MFD. to reduce hum modulation.
	Loop	1700KC	" " "	"	A5	Connect output from signal generator to a loop of two or three turns of wire. Place about a foot from receiver loop. Adjust for maximum output.
	"	1550KC	Tune for maximum output.	"	A6	"

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	1N5GT	1N5GT	5Y	
2	Converter	1A7GT	1A7GT	7Z	
3	IF Amp.	1N5GT	1N5GT	5Y	
4	Det.-AVC-AF	1H5GT	1H5GT	5Z	
5	Power Output	3Q5GT	3Q5GT	7AP	
6	Rectifier	117Z6GT	117Z6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TEMPLE PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	CE1-4A81	DY-419*	TA-240	PRSA150-40-40	UP6CJ44		▲ Filter
B	40	150			TA-440				▲ "
C	40	150				PRSA150-40-40			■ "
D	20	150		M-20-150			BR2015		"
8	.1	400		S-4-1	TC-1	484-.1	DT4P1	TP428	Line Filter
9	.25	400		S-4-25	TC-2	484-.25	DT4P25	TP430	Pwr. Supp. Bypass
10	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	Filament Bypass
11	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	" "
12	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	" "
13	.25	400		S-4-25	TC-2	484-.25	DT4P25	TP430	Line Isolation
14	.002	400		S-6-002	TC-22	484-002	DT6D2	TP405	Output Plate Bypass
15	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	Audio Coupling
16	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	" "
17	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
18	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	" "
19	.01	400		S-4-01	TC-11	484-01	DT4S1	TP421	Conv. Screen Bypass
20	.05	200		S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
21	100	500		MO.5-31	1FM-31	1468-0001	5W5T1	MC235	Audio Plate Bypass
22	100	500		MO.5-31	1FM-31	1468-0001	5W5T1	MC235	IF Coupling
23	220	500		MO.5-32	1FM-32	1468-0002	5W5T2	MC237	Osc. Grid Capacitor

*Do not use bypass section.

CONTROLS

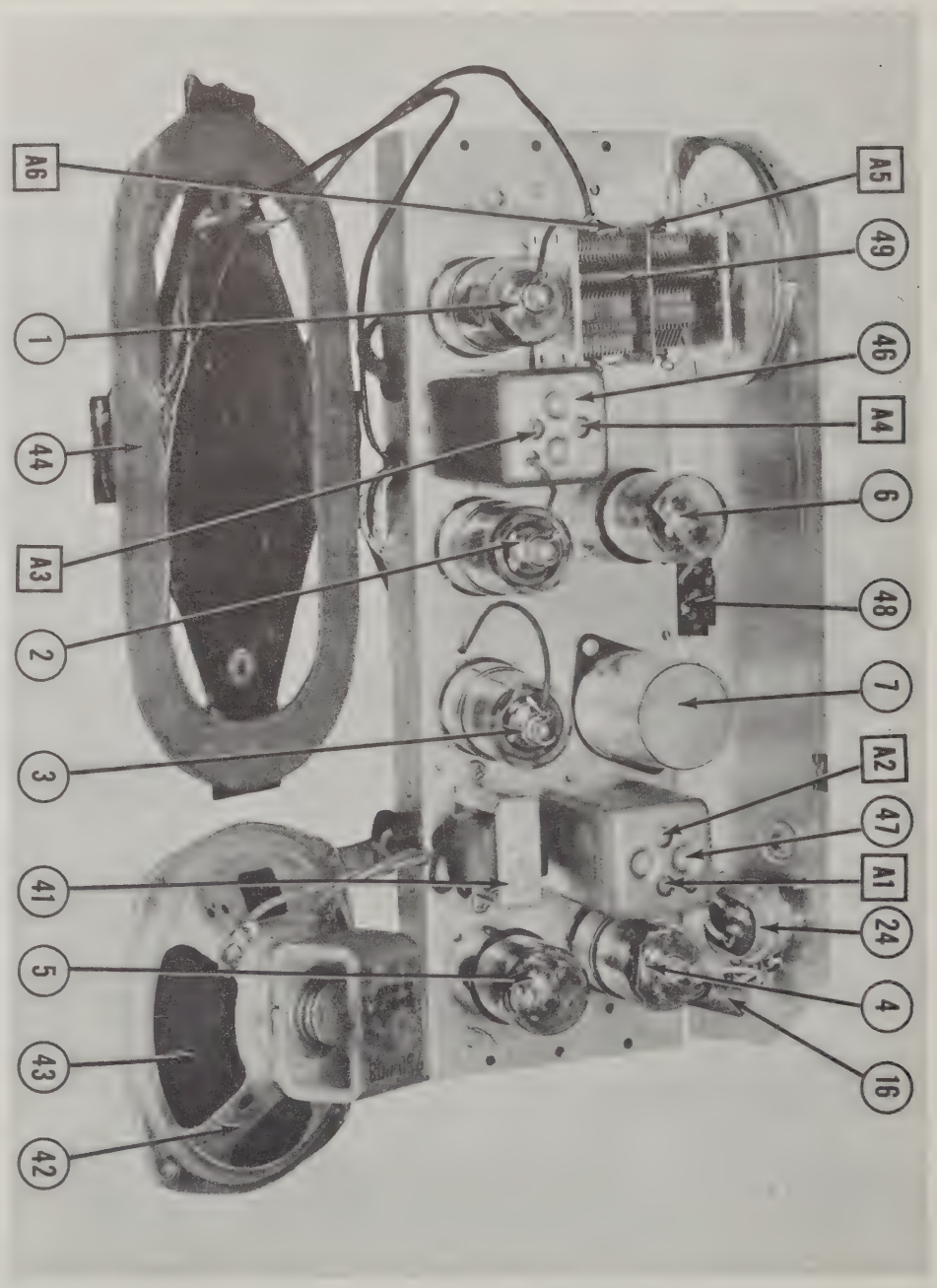
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TEMPLE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
24A	500KΩ	1	RP6-2	MK401	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	Not Req.	E	KSL-3	Attach to 24A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TEMPLE PART No.	IRC PART No.	IDENTIFICATION CODES
25	220KΩ	½		BTS-220K	Red-Red-Yl. Oscillator Grid
26	47KΩ	½		BTS-47K	Yl.-Vi.-Or. Mixer Screen Dropping
27	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Network
28	2.2 Meg.	½		BTS-2,2 Meg.	Red-Red-Grn. " "
29	10KΩ	½		BTS-10K	Br.-Blk.-Or. 1st IF Plate Load
30	15KΩ	½		BTS-15K	Br.-Grn.-Or. 2nd IF Grid
31	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn. AVC Network
32	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn. 1st AF Grid
33	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 1st AF Plate Load
34	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn. Output Grid
35	15Ω	½		BW-½-15	Br.-Grn.-Blk. Surge Limiter
36	2200Ω	1		BTA-2200	Red-Red-Red Filter
37	2400Ω	10	RW-2	ABA-2500‡	Filament String
38	150Ω	½		BW-½-150	Br.-Grn.-Br. Filament String
39	820Ω	½		BTS-820	Gray-Red-Br. Filament String
40	820Ω	½		BTS-820	Gray-Red-Br. Filament String

‡Set slider at 1200Ω from one end. When this replacement is used remove Item 38, 150Ω resistor.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TEMPLE PART No.	STANCOR PART No.	THORDAR'N PART No.		
	PRI.	SEC.	PRI.	SEC.					
41	7000Ω	3.2Ω	460Ω	.44Ω	TA-7-1	A-3875†	T-228471		†Drill new mounting holes.

SPEAKER

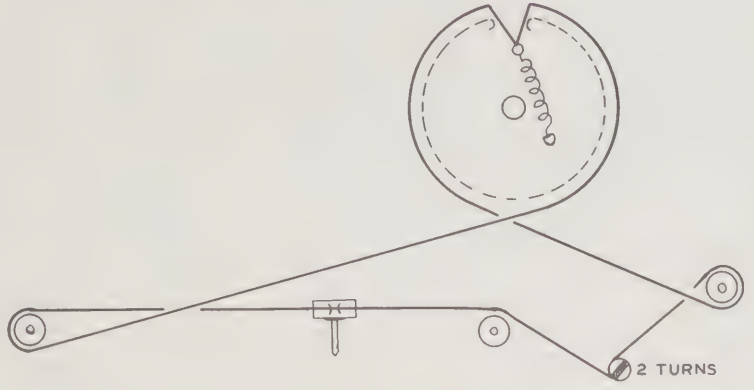
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			TEMPLE PART No.	JENSEN PART No.		
42	FIELD PM	VC IMP. 3.2Ω	EH-6-3	ST-107 Mod. P5-V		
43	CONE DIA. 4½"	VC DIA. ½"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		INSTALLATION NOTES
		PRI.	SEC.	TEMPLE PART No.	MEISSNER PART No.	
44	Loop Ant.		1.5Ω	LL-3		
45	Osc. Coil	1.5Ω	6.3Ω	LO-1	14-1040	
46	Input IF	20.2Ω	20.2Ω	TM2-6	16-6658	
47	Output IF	21.3Ω		TM2-7	16-6670	

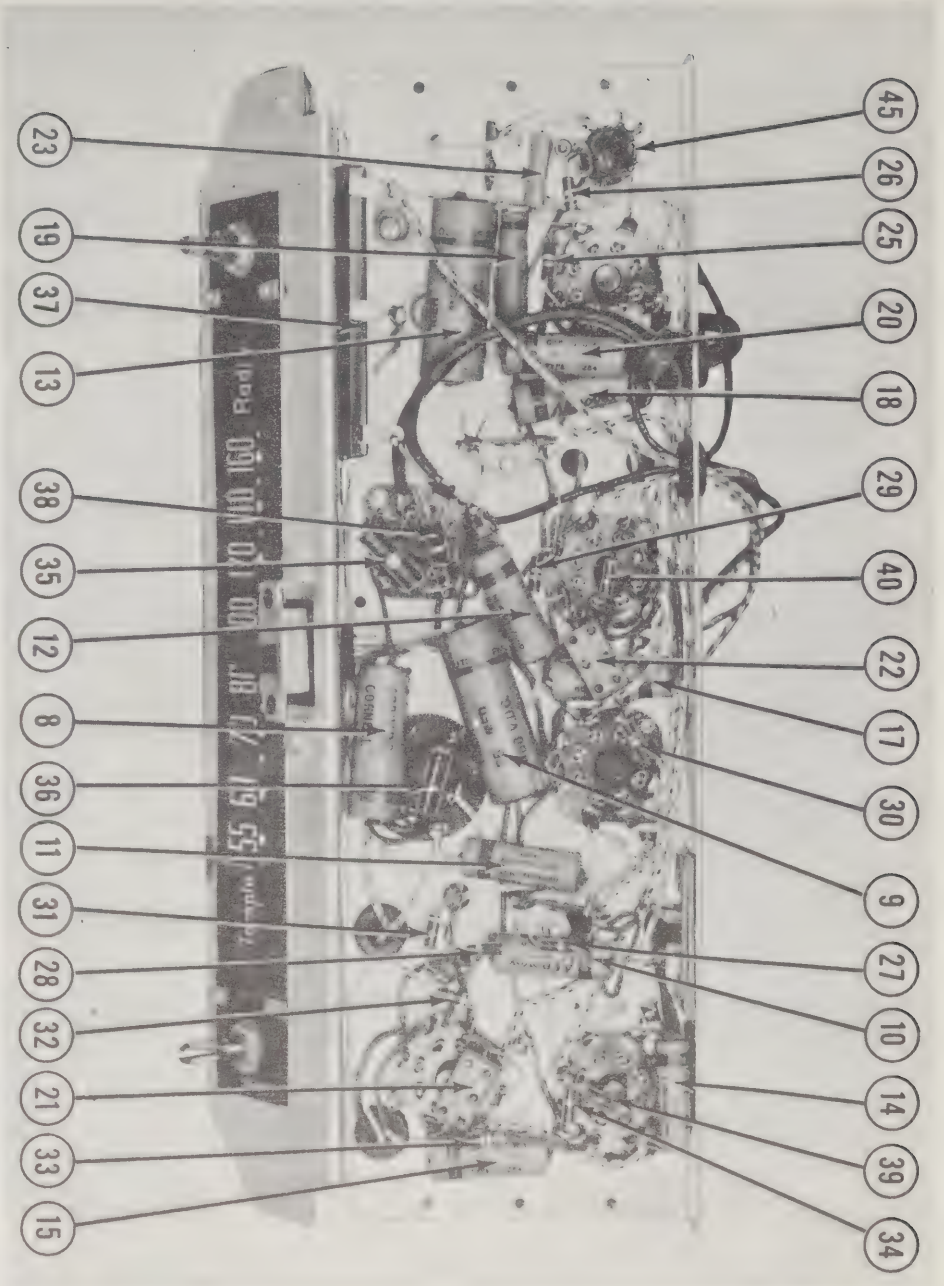
MISCELLANEOUS

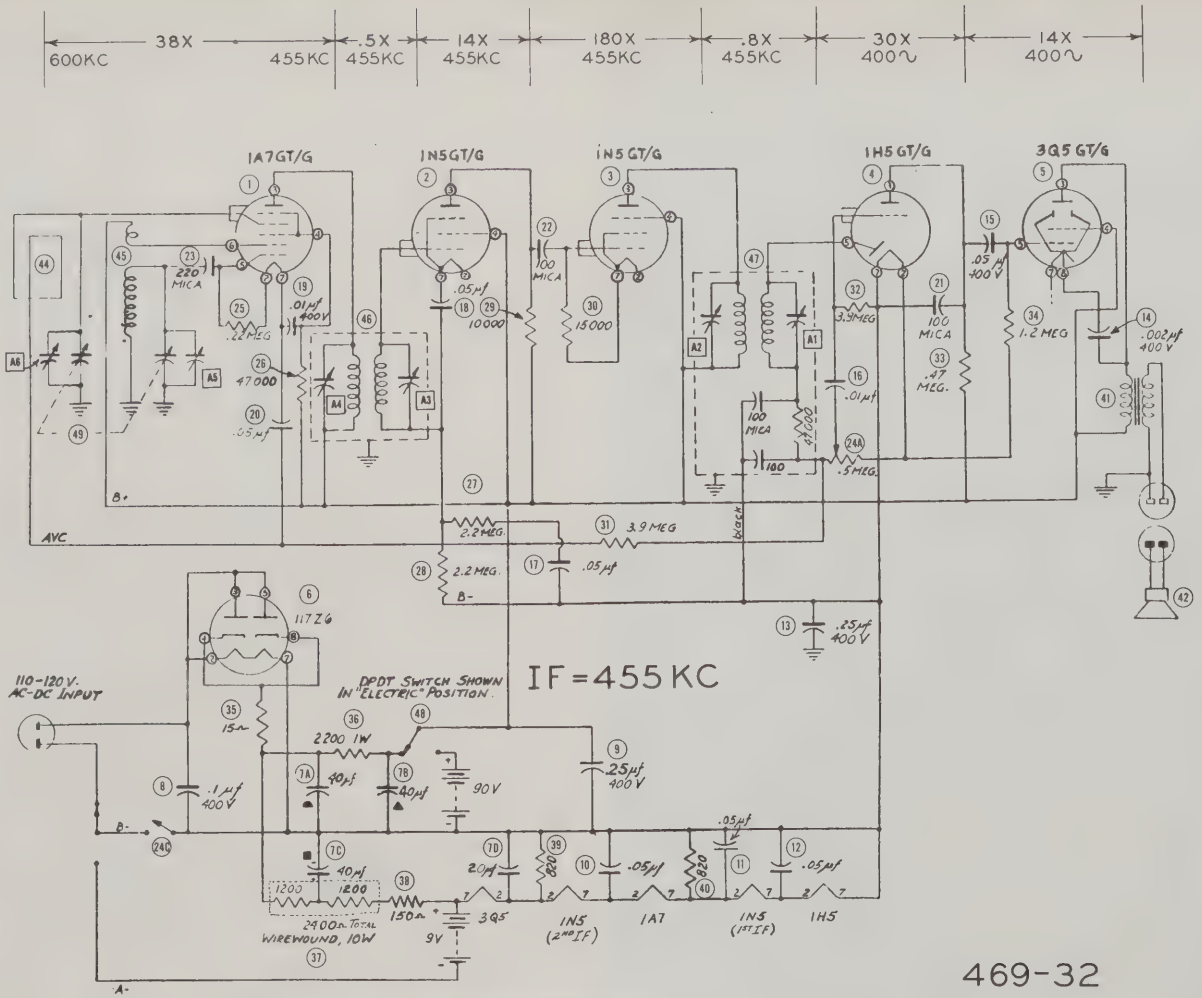
ITEM No.	PART NAME	TEMPLE PART No.	NOTES
48	Switch	SS-1	Power Change DPDT
49	Tuning Cap.	CV-6	
	Pointer	NP-3	
	Dial Scale	ND-12	
	Cabinet	CCCD-618	
	Knob	HK-16	



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT	0V.	4.2V.DC	100V.DC	55V.DC	1.6V.DC	100V.DC	2.8V.DC	.2V.DC	.2V.DC
2	1N5GT	0V.	2.8V.DC	90V.DC	100V.DC	0V.	0V.	1.4V.DC	.1V.DC	.1 V.DC
3	1N5GT	0V.	1.4 V.DC	100V.DC	100V.DC	0V.	0V.	0V.	0V.	0V.
4	1H5GT	0V.	5.4V.DC	68V.DC	0V.	1.4V.DC	.2V.DC	4.2V.DC	4.2V.DC	.2V.DC
5	3Q5GT	0V.	5.4V.DC	97 V.DC	100V.DC	0V.	0V.	7.8V.DC	6.6V.DC	
6	117Z6GT	131V.DC	117V.AC	117 V.AC	132V.DC	117V.AC	0V.	0V.	132V.DC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Cap
1	1A7GT	INF.	*	4.8Kn	52Kn	220Kn	4.8Kn	*	2.1MEG.	2.1MEG.
2	1N5GT	INF.	*	14.8Kn	4.8Kn	INF.	0n	*	1.6MEG.	1.6MEG.
3	1N5GT	INF.	*	4.8Kn	4.8Kn	INF.	15.5Kn	*	INF.	15.5Kn
4	1H5GT	INF.	*	500Kn	INF.	540Kn	3.4MEG.	*	*	3.4MEG.
5	3Q5GT	INF.	*	4.8Kn	4.8Kn	1.2 MEG.	0n	*	*	
6	117Z6GT	2.6Kn	240n	240n	2.6Kn	240n	INF.	0n	2.6Kn	

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

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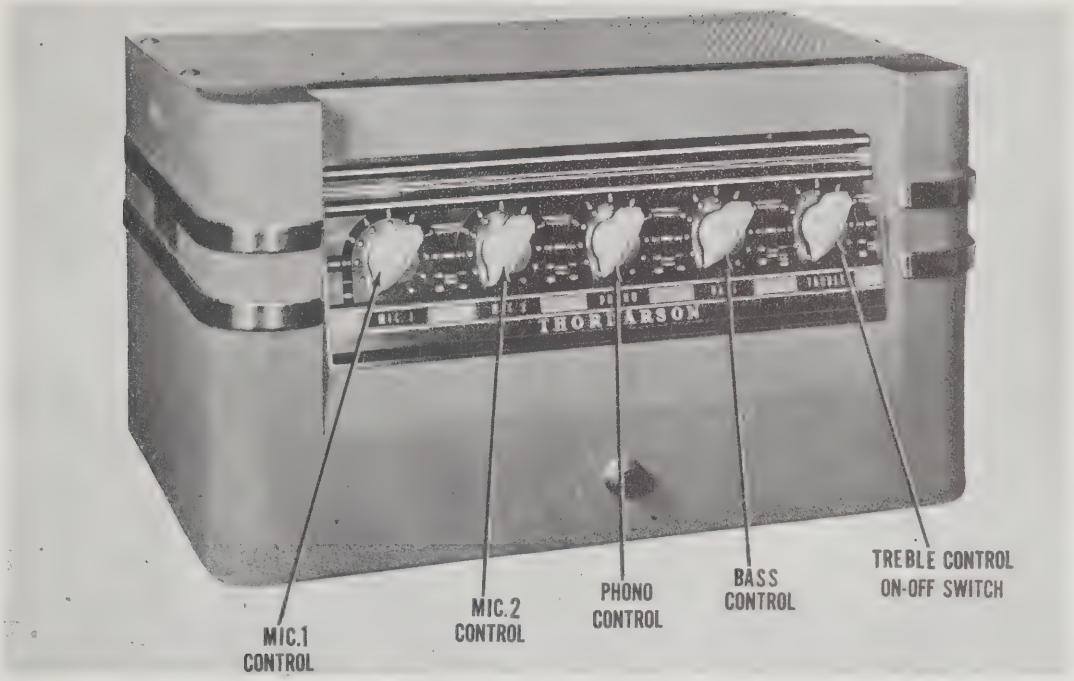
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative by shorting across volume control.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

THORDARSON
MODEL T-31W25A



THORDARSON MODEL T-31W25A

TRADE NAME	Thordarson Model T-31W25A
MANUFACTURER	Thordarson Electric Mfg. Div. of Maguire Industries Inc., 500 West Huron Street,. Chicago 10, Ill.,
TYPE SET	AC Operated 25 Watt Beam Power Amplifier
TUBES (SEVEN)	Types 6SJ7 MIC. Amp.. 6SJ7 MIC. Amp., 6SJ7 AF Amp., 6N7GT Driver, 2- 6L6G Push-Pull Power Output. 5X4G Rectifier
POWER SUPPLY	110-120 Volts AC
RATING	1,38 Amps. @ 117V AC

NOTE: VOLTAGE AND RESISTANCE READINGS TAKEN WITH ALL CONTROLS IN COUNTER-CLOCKWISE POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7	0V.	3.2V.AC	.25V.DC	-.25V.DC	.25V.DC	13V.DC	3.2V.AC	58V.DC
2	6SJ7	0V.	3.2V.AC	.25V.DC	-.57V.DC	.25V.DC	13V.DC	3.2V.AC	63V.DC
3	6SJ7	0V.	3.2V.AC	1.55V.DC	0V.	1.55V.DC	32V.DC	3.2V.AC	57V.DC
4	6N7GT	0V.	3.2V.AC	285V.DC	0V.	0V.	285V.DC	3.2V.AC	5.1V.DC
5	6L6G	0V.	3.2V.AC	365V.DC	265V.DC	-16V.DC	0V.	3.2V.AC	0V.
6	6L6G	0V.	3.2V.AC	365V.DC	265V.DC	-16V.DC	387V.DC	3.2V.AC	0V.
7	5X4G	0V.	0V.	385V.AC	0V.	385V.AC	INF.	395V.DC	395V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SJ7	0Ω	.1Ω	435Ω	2.7MEG.	435Ω	3.1MEG.	1Ω	550KΩ
2	6SJ7	0Ω	.1Ω	435Ω	2.7MEG.	435Ω	3.2MEG.	.1Ω	570KΩ
3	6SJ7	0Ω	.1Ω	2.5KΩ	150KΩ	2.5KΩ	1 MEG.	.1Ω	300KΩ
4	6N7GT	0Ω	.1Ω	25KΩ	225KΩ	225KΩ	25KΩ	.1Ω	620Ω
5	6L6G	0Ω	.1Ω	15 KΩ	13KΩ	127Ω	INF.	.1Ω	0Ω
6	6L6G	0Ω	.1Ω	15KΩ	13KΩ	122Ω	15KΩ	.1Ω	0Ω
7	5X4G	INF.	INF.	130Ω	INF.	130Ω	INF.	15KΩ	15KΩ

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: THORDARSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	MIC Amp.	6SJ7	6SJ7	8N	
2	MIC Amp.	6SJ7	6SJ7	8N	
3	AF Amp.	6SJ7	6SJ7	8N	
4	Driver	6N7GT	6N7GT	8B	
5	Power Output	6L6G	6L6G	7AC	
6	Power Output	6L6G	6L6G	7AC	
7	Rectifier	5X4G	5X4G	5Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: THORDARSON PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
8	8	600	CE601-805	D-8-600	AP-86	GL600-8	KR608	HS693	Filter
9	8	600	CE601-805	D-8-600	AP-86	GL600-8	KR608	HS693	"
10	50	50	CE50-506	M-50-50	TA-550	PRS50-50	BR505	TC39	Bias Filter
11A	10	450	CE2004	DY-312	EL-202	AF22J4A	UP6CJ12	FP332	■ Filter
B	10	450							▲ "
C	20	25							Cath. Bypass
12	10	450	CE451-106	M-10-450	UT-12	PRS450-10	BR1045	TC72	Filter
13	25	25	CE25-256	M-25-25	TA-25	PRS25-25	BR252A	TC26	Cath. Bypass
14	25	25	CE25-256	M-25-25	TA-25	PRS25-25	BR252A	TC26	" "
15	.005	400	CP401-502	S-4-005	TC-25	484-005	DT6D5	TP408	Tone Compensation
16	.1	400	CP401-104	S-4-1	TC-1	484-.1	DT4P1	TP428	Audio Coupling
17	.1	400	CP401-104	S-4-1	TC-1	484-.1	DT4P1	TP428	Amp. Screen Bypass
18	.05	400	CP401-503	S-4-05	TC-15	484-05	DT4S5	TP426	Audio Coupling
19	.1	400	CP401-104	S-4-1	TC-1	484-.1	DT4P1	TP428	6SJ7 Screen Bypass
20	.05	400	CP401-503	S-4-05	TC-15	484-05	DT4S5	TP426	Audio Coupling
21	.1	400	CP401-104	S-4-1	TC-1	484-.1	DT4P1	TP428	6SJ7 Screen Bypass
22	500	500	CM501-501	M0.5-35	1FM-35	1468-0005	5W5T5	MC245	Tone Compensation

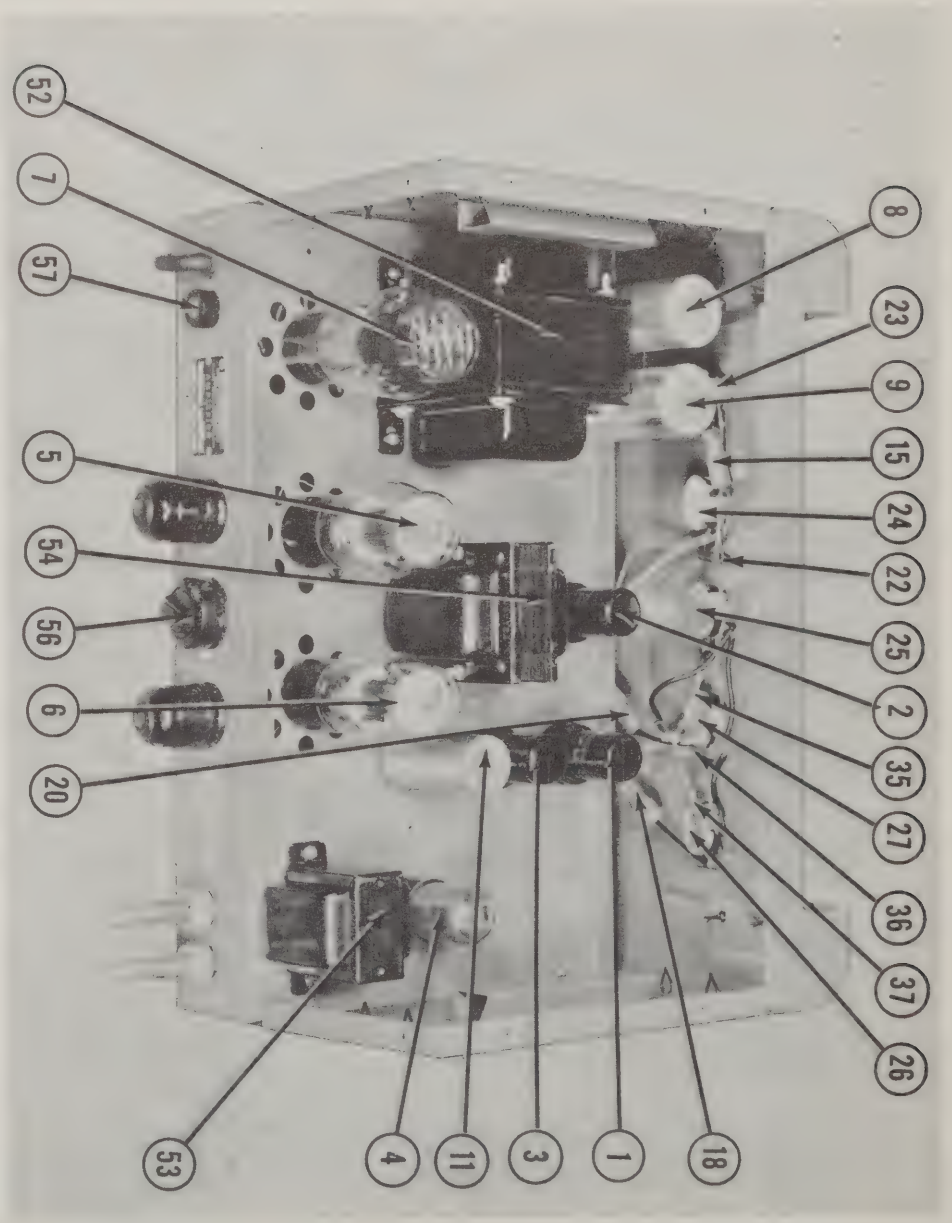
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: THORDARSON PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
23A	250K	1	RCP-1-2545	MR44	D13-130	M-64-Z	Treble Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 23A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "
24A	9 Meg.	1	RCP-3-905	UC508		M-99-Z	Bass Control
B	Shaft		Not Req.	Not Req.		Not Req.	Attach to 24A per instructions
25A	1 Meg.	1	RCP-1-105	MR53	D13-137	M-63-Z	Phono Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 25A per instructions
26A	1 Meg.	1	RCP-1-105	MR53	D13-137	M-63-Z	Mike 1 Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 26A per instructions
27A	1 Meg.	1	RCP-1-105	MR53	D13-137	M-63-Z	Mike 2 Control
B	Shaft		Not Req.	Not Req.	A	Not Req.	Attach to 27A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: THORDARSON PART No.	IRC PART No.	IDENTIFICATION CODES
28	2.2 Meg.	1/3	RC1/3 225	BTS-2.2 Meg.	Red-Red-Grn. 1st Mike Amplifier Grid
29	2.2 Meg.	1/3	RC1/3 225	BTS-2.2 Meg.	Red-Red-Grn.- 2nd. " " "
30	470Ω	1/2	RC1/2 471	BTS-470	Yl.-Vi.-Br. " " Cathode
31	3.3 Meg.	1/2	RC1/2 335	BTS-3.3 Meg.	Or.-Or.-Grn. 1st. " Amp. Screen Dropping
32	3.3 Meg.	1/2	RC1/2 335	BTS-3.3 Meg.	Or.-Or.-Grn. 2nd. " " " "
33	470KΩ	1/2	RC1/2 474	BTS-470K	Yl.-Vi.-Yl. 1st. " " Plate "

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	THORDARSON PART No.	IRC PART No.	
34	470KΩ	1/2	RC1/2 474	BTS-470K	Yl.-Vi.-Yl. 2nd. " " " "
35	470KΩ	1/2	RC1/2 474	BTS-470K	Yl.-Vi.-Yl. Series Phono
36	470KΩ	1/2	RC1/2 474	BTS-470K	Yl.-Vi.-Yl. Amp. Grid Decoupling
37	470KΩ	1/2	RC1/2 474	BTS-470K	Yl.-Vi.-Yl. " " "
38	470Ω	1/2	RC1/2 471	BTS-470	Yl.-Vi.-Br. " Cathode
39	2200Ω	1/2	RC1/2 222	BTS-2200	Red-Red-Red " "
40	1 Meg.	1/2	RC1/2 105	BTS-1 Meg.	Br.-Blk.-Grn. " Screen Dropping
41	220KΩ	1/2	RC1/2 224	BTS-220K	Red-Red-Yl. " Plate Load
42	10 Meg.	1/2	RC1/2 106	BTS-10 Meg.	Br.-Blk.-Grn. Feedback
43	1000Ω	1/2	RC1/2 102	BTS-1000	Br.-Blk.-Red Driver Cathode
44	2200Ω	1/2	RC1/2 222	BTS-2200	Red-Red-Red " "
45	100KΩ	1/2	RC1/2 104	BTS-100K	Br.-Blk.-Yl. Voltage Dropping
46	10KΩ	1	RC-1-103	BTA-10K	Br.-Blk.-Or. " "
47	220KΩ	1/2	RC1/2-224	BTS-220K	Red-Red-Yl. Feedback
48	10KΩ	10	RW-10-103	AB-10K	Voltage Divider
49	7500Ω	25	RWS-25-752	DHA-7500	" "
50	150Ω	50	RWS-50-151	EPA-150	Bias

FILTER CHOKE

ITEM NO.	RATINGS			REPLACEMENT DATA			INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000~)	THORDARSON PART NO.	STANCOR PART NO.	THORDARSON PART NO.	
51	.165A	95Ω	5-5Henries	T-49809A	C-2309 *		* Drill new mounting holes.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	THORDARSON PART No.	STANCOR PART No.	THORDARSON PART No.	
52	117V AC @1.38A	800VCT @.165A	5.1V AC @2.7A	6.4V AC @ 3.6A	T-49810A	P-4050 *	T-22R33 *	* Drill new mounting holes.

TRANSFORMER (DRIVER)

ITEM NO.	RATING			TURNS RATIO	REPLACEMENT DATA			INSTALLATION NOTES
	PRIMARY INDUCTANCE	DC RES. PRI.	DC RES. SEC.	PRI. TO 1/2 SEC.	THORDAR'N PART NO.	STANCOR PART NO.	THORDAR'N PART NO.	
53	15 Henries	700Ω	90Ω CT	6.2 to 1	T-49811A	A-4216*	T-20D79*	*Drill new mounting holes.

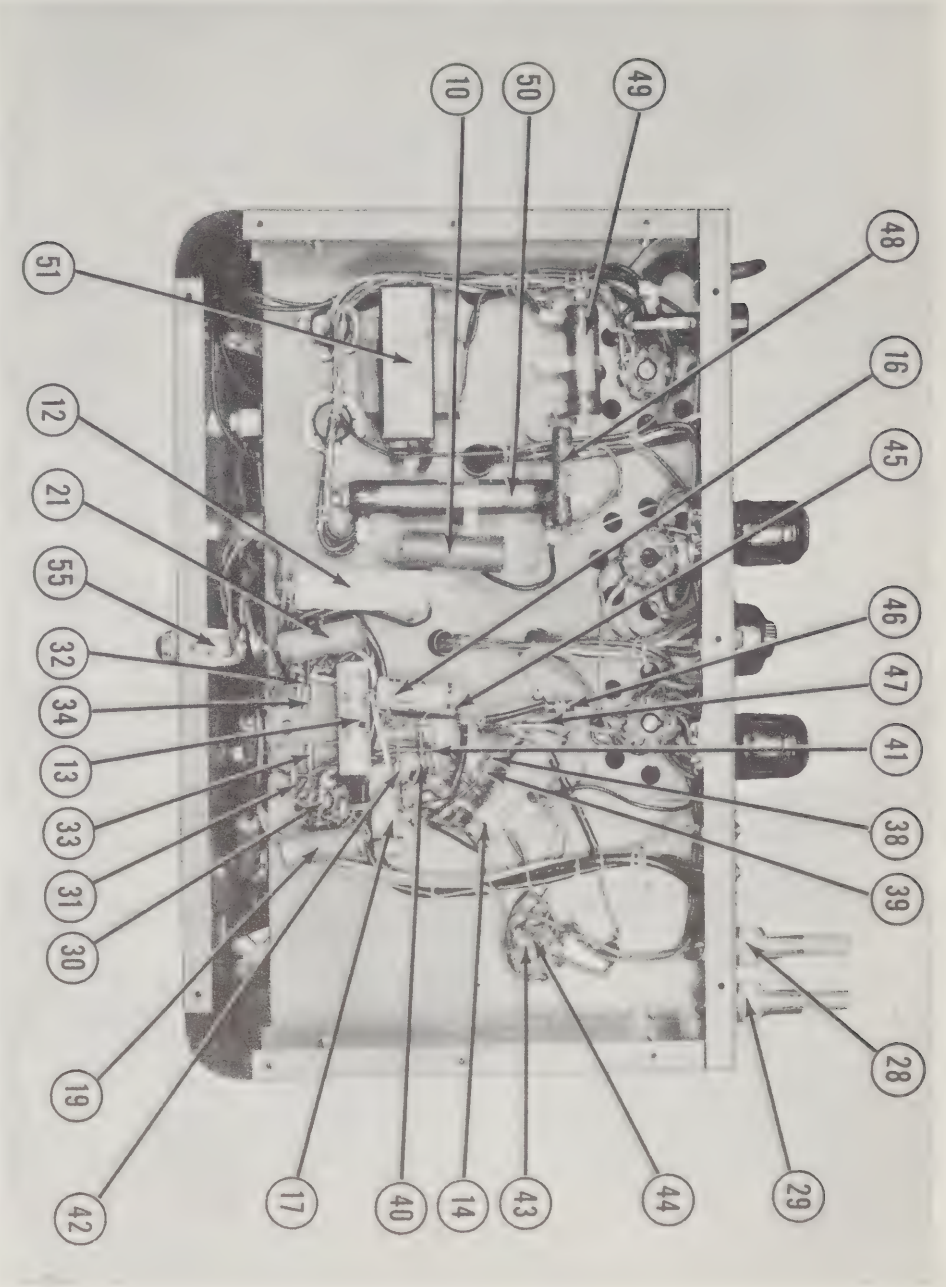
TRANSFORMER (OUTPUT)

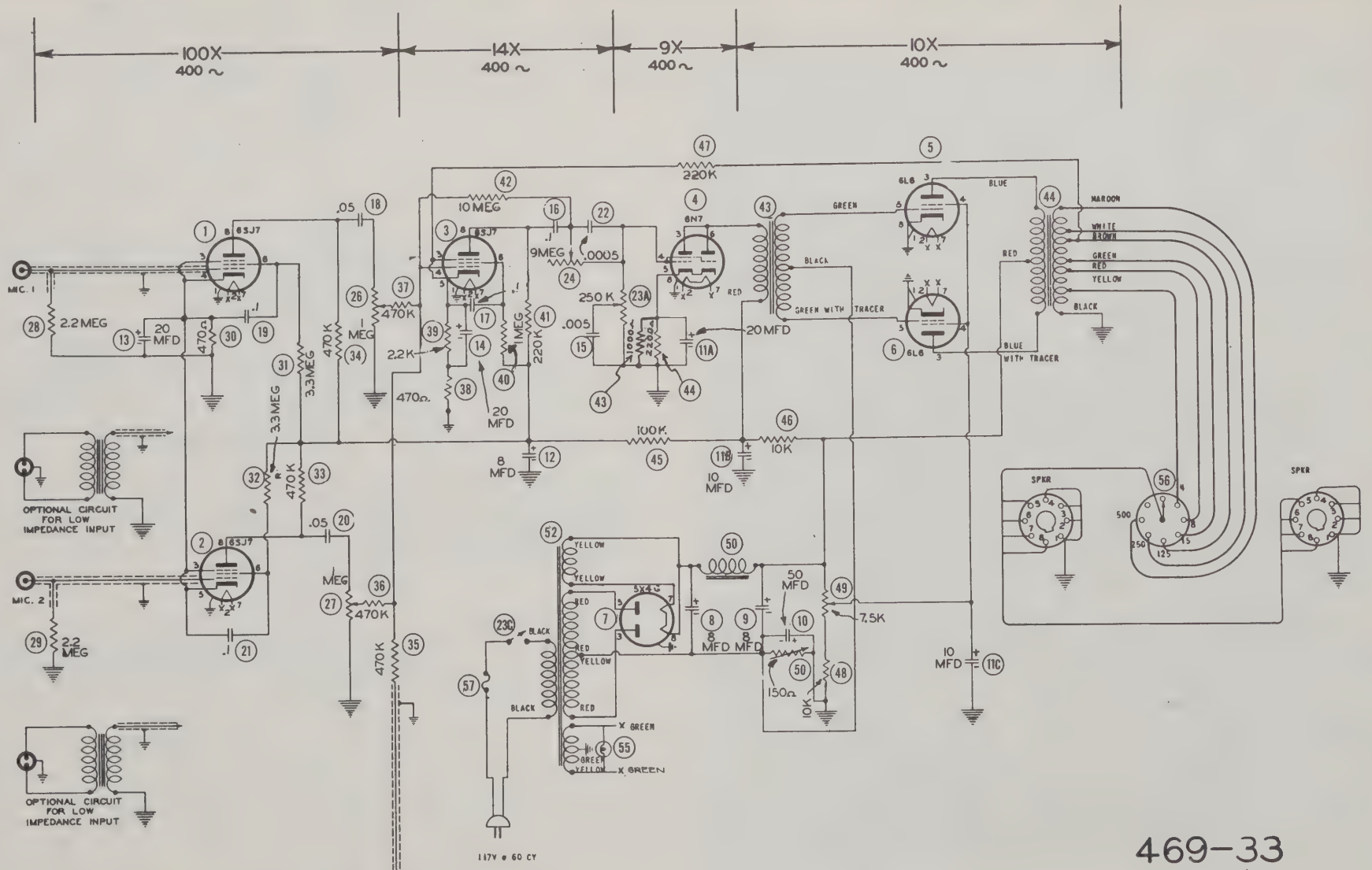
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	THORDARSON PART No.	STANCOR PART No.	THORDAR'N PART No.		
54	5600Ω CT.	4Ω 8Ω 15Ω 125Ω 250Ω 500Ω	430Ω CT.	.5Ω .55Ω .9Ω 7.4Ω 17.8Ω 27Ω	T-49812A	A-3800 *	T-22870*		* Drill new mounting holes.

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					THORDARSON PART No.		
55	Screw	6-8	0.15	Brown			Type 40

CHASSIS—BOTTOM VIEW





469-33

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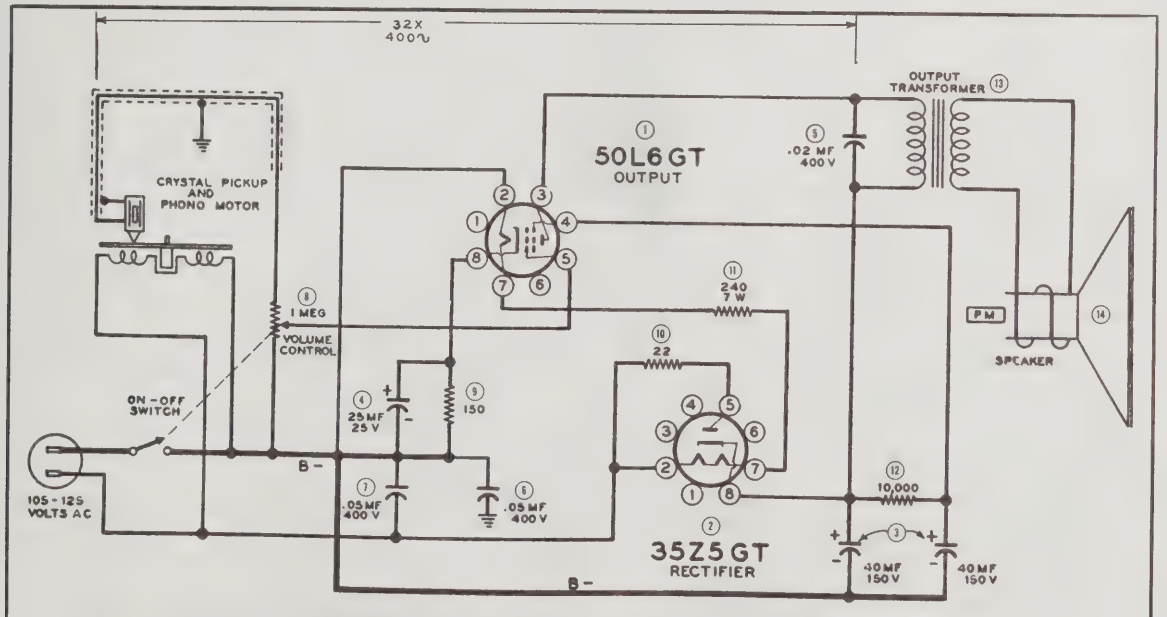
TRUETONE
MODEL D2605

TRUETONE MODEL D2605

TRADE NAME	Truetone Model D2605 (Factory Model 2AW2)
SUPPLIER	Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo.
TYPE SET	AC Operated Record Player with Two Tube Amp. & Speaker
TUBES (TWO)	Types, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	105-125 Volts AC RATING .220 Amps. @ 117V AC



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	50L6GT	0V.	0V.	124V.DC	108V.DC	0V.	0V.	50V.AC	6.8V.DC
2	35Z5GT	0V.	117V.AC	112V.AC	0V.	116V.AC	0V.	85V.AC	132V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	50L6GT	INF.	0Ω	80KΩ	70KΩ	800KΩ	INF.	45Ω	147Ω
2	35Z5GT	INF.	290Ω	285Ω	INF.	315Ω	INF.	262Ω	80KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-34

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	Power Output	50L6GT	50L6GT	7AC	
2	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
3A	40	150	A-8C-11119	DY-2x40-150	EL-25	AF88D	UP6BJ34	FP214	■ Filter
B	40	150							▲ "
4	25	25	A-8C-11678	M-25-25	TA-25	PRS25-25	BR252A	TC26	Cath. Bypass
5	.02	400	C-8D-10774	S-4-02	TC-12	484-02	DT4S2	TP423	50L6 Plate Bypass
6	.05	400	C-8D-10613	S-4-05	TC-15	484-05	DT4S5	TP426	Line Isolation
7	.05	400	C-8D-10613	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
8A	1 Meg.	1	A-10A-11555	MK402	D13-133	AM-63-2	Volume Control
B	Shaft		Not Req.	Not Req.	E	KS8-3	Attach to 8A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	IDENTIFICATION CODES
9	150Ω	½	C-9B1-52	BW-½-150	Br.-Grn.-Br. Output Cathode
10	22Ω	½	C-9B1-3	BW-½-22	Red-Red-Blk. Rectifier Ballast
11	240Ω	7½	B-9C-11559	AB-250	Line Dropping
12	10KΩ	½	C-9B1-74	BTS-10K	Br.-Blk.-Or. Filter

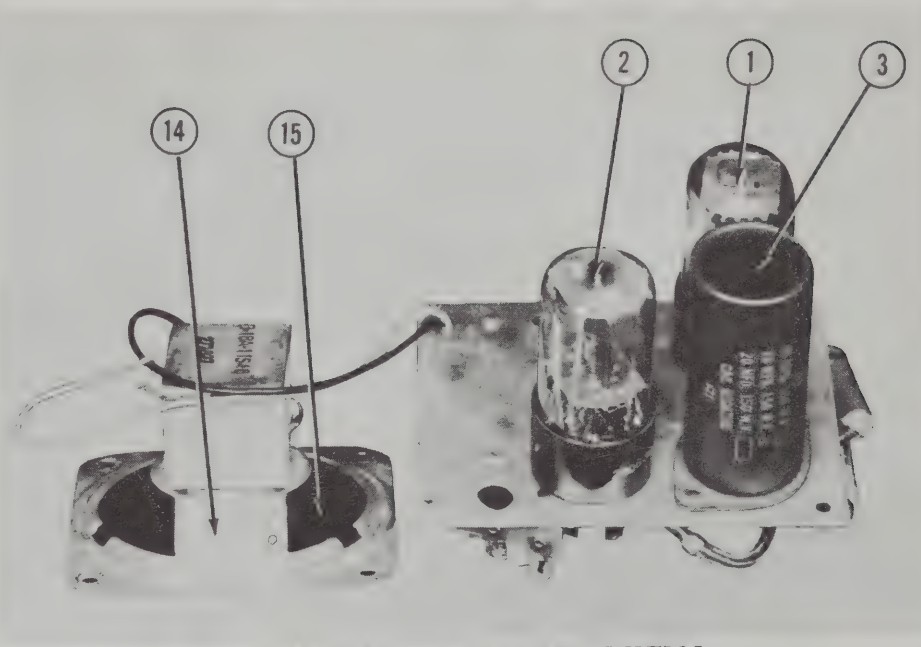
TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
13	2300Ω	3.7Ω	190Ω	.7Ω	B-12C-10074-2	A-3876	T-22S45		

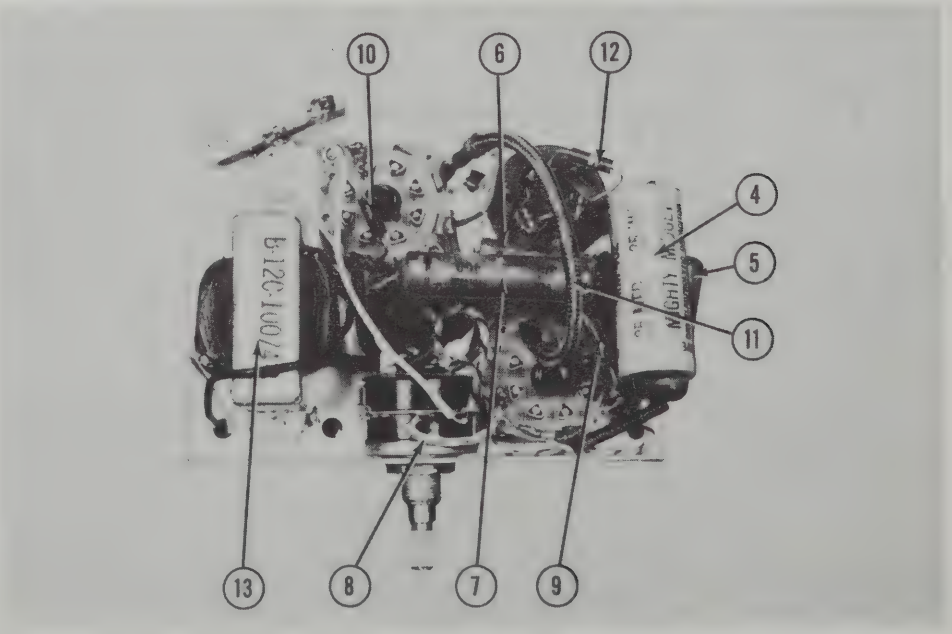
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: TRUETONE PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.				
14	PM	3.7Ω	B-16A-11546			
	COIL DIA.	VC DIA.				
15	3-3/8"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT			

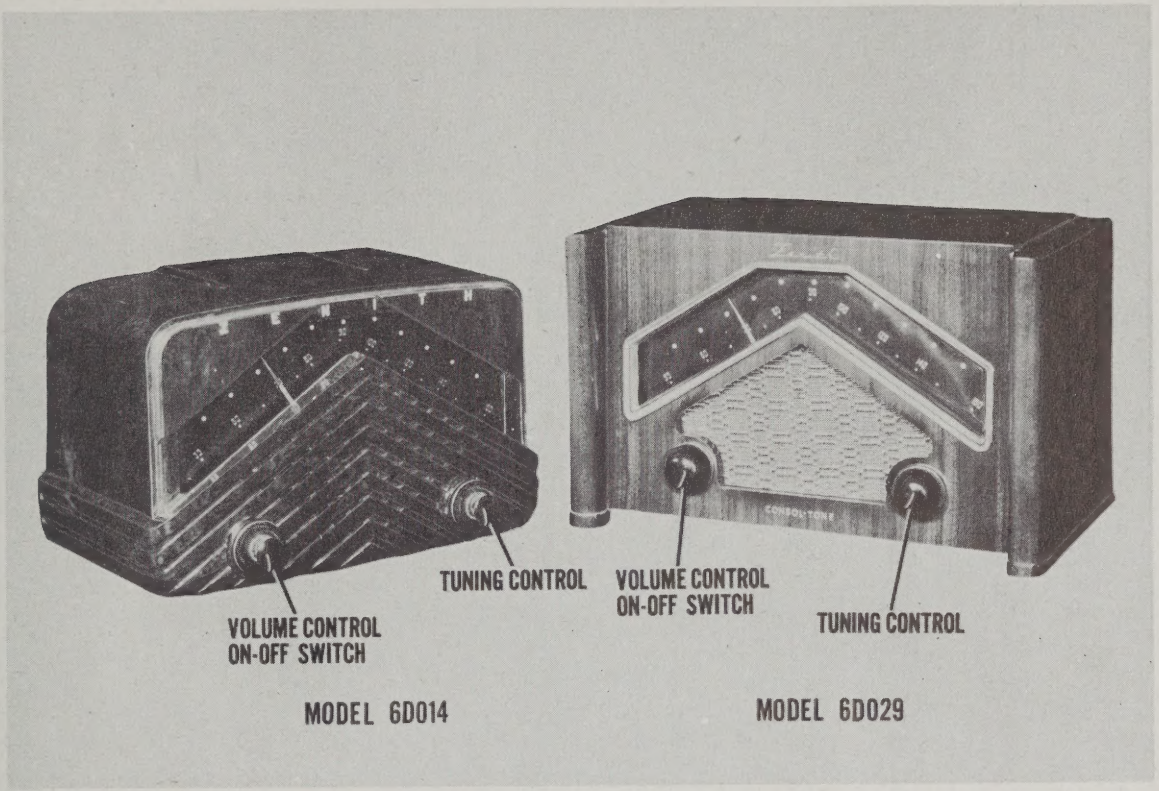
CHASSIS—TOP VIEW



CHASSIS—BOTTOM VIEW



ZENITH
MODELS 6D014, 6D014W,
6D029, 6D029G



ZENITH MODEL 6D014

TRADE NAME	Zenith Models 6D014, 6D014W, 6D029, 6D029G (Chassis No. 6C01)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago, Ill.
TYPE SET	AC-DC Superheterodyne - Self Contained Loop Antenna
TUBES (SIX)	Types, 14C7 RF Amp., 14Q7 Converter, 14C7 IF Amp., 12SQ7GT Det.-AVC-AF, 35L6GT Power Output, 3525GT Rectifier
POWER SUPPLY	117-Volts AC-DC
TUNING RANGE—BROADCAST	535-1620KC RATING .240 Amps. @ 117V AC

ALIGNMENT INSTRUCTIONS

To set pointer, turn variable fully closed and set pointer at calibration mark at extreme left end of dial. Use isolation transformer if available. If not, connect capacitor in series with the low side of the signal generator and B-. Set volume control at maximum volume and keep output from signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
.5 MFD.	High side to stator of rear section of variable. Low side to B-.	455KC	600KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation trans. is not used, reduce dummy Ant. to .001 MFD. to reduce hum modulation.
	Loop	1600KC	1600KC	"	A5	Connect output of signal generator to a single turn loop and couple loosely to Wave Magnet. Adjust for maximum output.
	"	1400KC	Tune for maximum output.	"	A6	"
	"	"	"	"	A7	"

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PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA: ZENITH PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	14C7	14C7	8V	
2	Converter	14Q7	14Q7	8AL	
3	IF Amp.	14C7	14C7	8V	
4	Det.-AVC-AF	12SQ7GT	12SQ7GT	8Q	
5	Power Output	35L6GT	35L6GT	7AC	
6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ZENITH PART No.	SOLAR PART No.	SPRAGUE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
7A	40	150	22-1519	DY-403020-150	EL-224	AF84D20A	UP6CJ44	FP306	■ Filter
B	20	150							▲ "
C	20	150							"
8	.05	200	22-1017	S-4-05	TC-15	484-05	DT4S5	TP426	Line Filter
9	.02	400	22-1379	S-4-02	TC-12	484-02	DT4S2	TP423	Output Plate Bypass
10	.01	600	22-196	S-6-01	TC-11	684-01	DT6S1	TP410	Audio Coupling
11	.004	600	22-1362	S-6-004	TC-24	684-004	DT6D4	TP407	" "
12	.0005	600	22-854	S-6-0005	TC-35	1468-0005	DT6T5	TP403	Audio Plate Bypass
13	.04	400	22-1361	S-6-04	TC-14	484-04	DT4S4	TP425	Tone Compensation
14	.05	600		S-6-05	TC-15	684-05	DT6S5	TP415	Line Isolation
15	.05	200	22-829	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter
16	.1	200	22-827	S-4-1	TC-1	484-.1	DT4P1	TP428	RF Bypass Pwr. Supp.
17	.05	200	22-829	S-4-05	TC-15	484-05	DT4S5	TP426	AVC Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ZENITH PART No.	MALLORY PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
18A	500KΩ	1	63-1335	TM230	D13-133X	AT-78	Volume Control
B	Shaft		Not Req.	SS25	E	KSS-3	Attach to 18A per instructions
C	Switch		" "	M26	41	SW-A	" " " " "

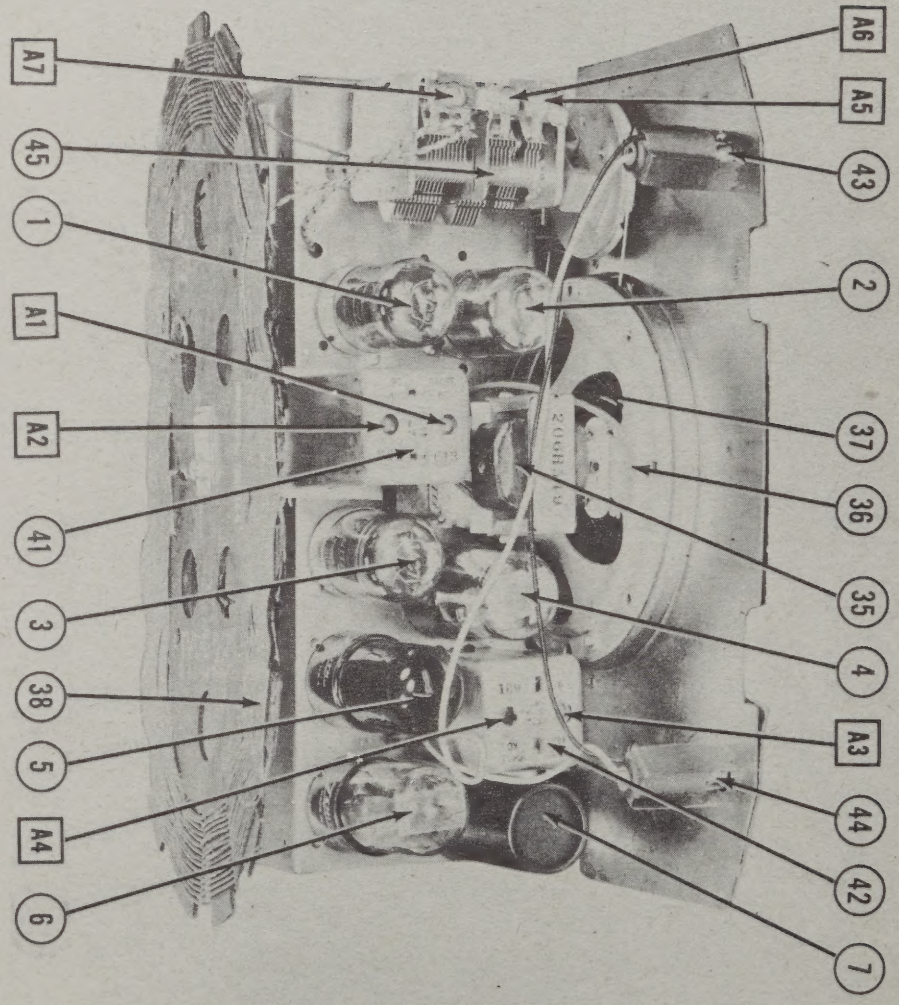
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ZENITH PART No.	IRC PART No.	IDENTIFICATION CODES
19	15KΩ	1/4	63-590	BTS-15K	Br.-Grn.-Or. RF Plate Load
20	220Ω	1/4	63-579	BW-½-220	Red-Red-Br. Parasitic Suppressor
21	22KΩ	1/4	63-591	BTS-22K	Red-Red-Or. Oscillator Grid
22	15 Meg.	1/4	63-976	BTS-15 Meg.	Br.-Grn.Blue AVC Network
23	2.2 Meg.	1/4	63-600	BTS-2.2 Meg.	Red-Red-Grn. " "
24	2.2 Meg.	1/4	63-600	BTS-2.2 Meg.	Red-Red-Grn. IF Grid
25	2.2 Meg.	1/4	63-600	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
26	22KΩ	1/4	63-591	BTS-22K	Red-Red-Or. Tone Compensation
27	15 Meg.	1/4	63-976	BTS-15 Meg.	Br.-Grn.-Blue 1st AF Grid
28	470KΩ	1/4	63-597	BTS-15 Meg.	Yl.-Vi.-Yl. " " Plate Load
29	470KΩ	1/4	63-597	BTS-470k	Yl.-Vi.-Yl. Output Grid
30	150Ω	1/2		BW-½-150	Br.-Grn.-Br. " Cathode
31	470Ω	1	63-1222	BTA-470	Yl.-Vi.-Br. Filter
32	330KΩ	1/4		BTS-330K	Or.-Or.-Yl. Tone Compensation
33	470Ω	1	63-1222	BTA-470	Yl.-Vi.-Br. Filter
34	22Ω	1		BT-1-22	Red-Red-Blk. Surge Limiter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: ZENITH PART No.	STANCOR PART No.	THORDAR'N PART No.		INSTALLATION NOTES
35	2500Ω	3.5Ω	230Ω Tapped @3.5Ω	.75Ω	Part of 49-549	A-3876 +			+ Bend mounting tabs down, file out slots and mount on original bracket. Add additional filter to reduce hum level.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA ZENITH PART No.	JENSEN PART No.		INSTALLATION NOTES
	FIELD	VC IMP.		ST-107 *		* Fabricate new mounting bracket and drill holes in frame to support dial.
36	PM	3.5Ω	49-549	Mod.P5-V		
	CONE DIA.	VC DIA.				
37	4-3/4"	1/2"	NOT READILY REPLACEABLE-USE COMPLETE SPEAKER UNIT.			

R F COILS

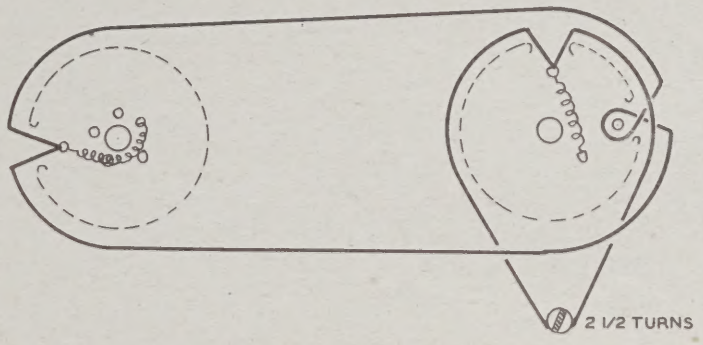
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA MEISSNER PART No.	INSTALLATION NOTES
38	Loop Ant.	0Ω	1Ω	S11124		
39	RF Coil	3.5Ω	11Ω	S9561		
40	Osc. Coil	1Ω	8Ω	S9578		
41	Input IF	17Ω	10.5Ω	95-811	16-6658	
42	Output IF	35Ω		95-958	16-6670	

DIAL LIGHT

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ZENITH PART No.		INSTALLATION NOTES
43	Bayonet	3.2	0.15	White	100-90		Type 1490
44	Bayonet	3.2	0.15	White	100-90		Type 1490

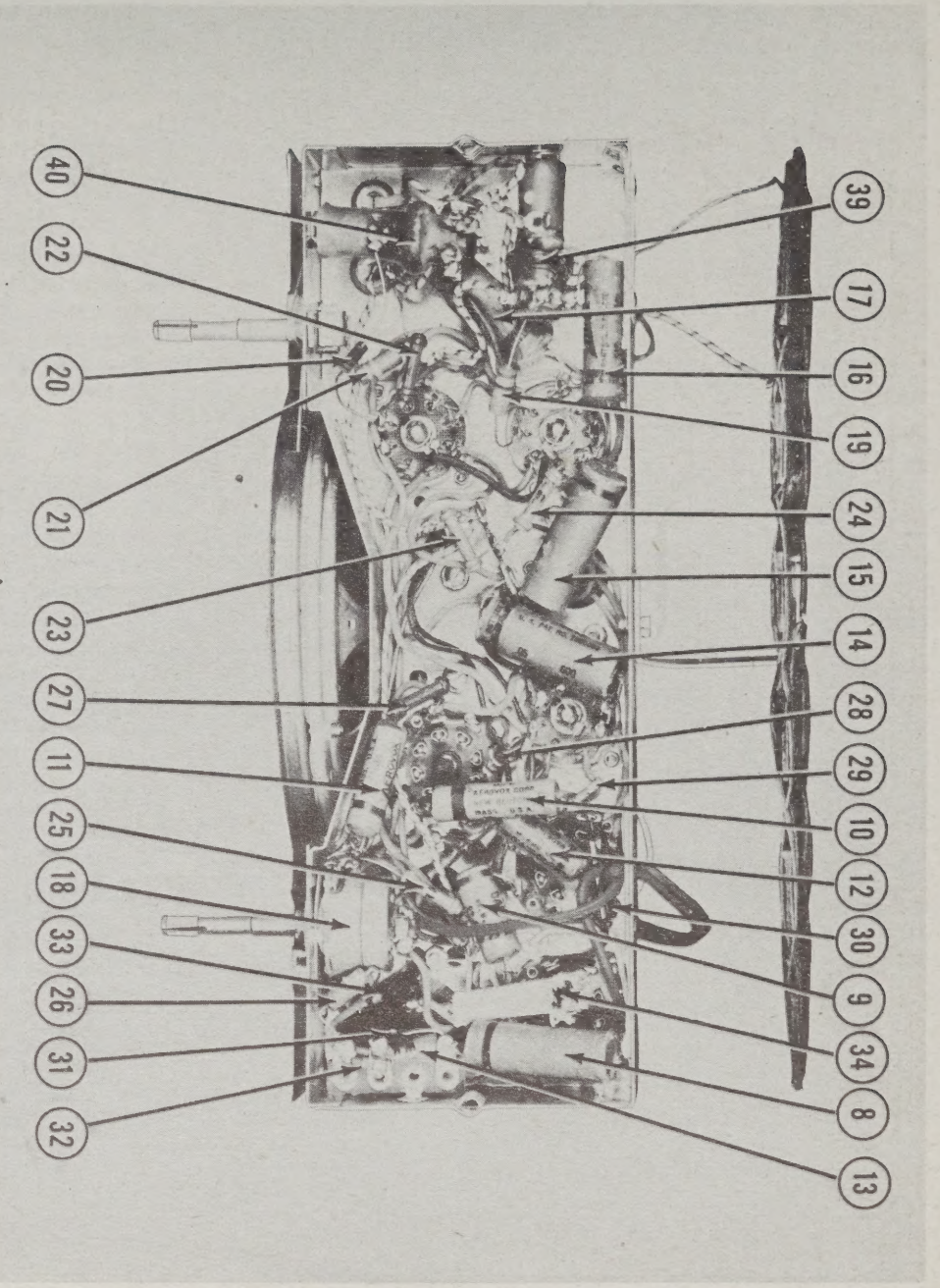
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
45	Tuning Cap.	22-1358	3 Gang Variable Cap.

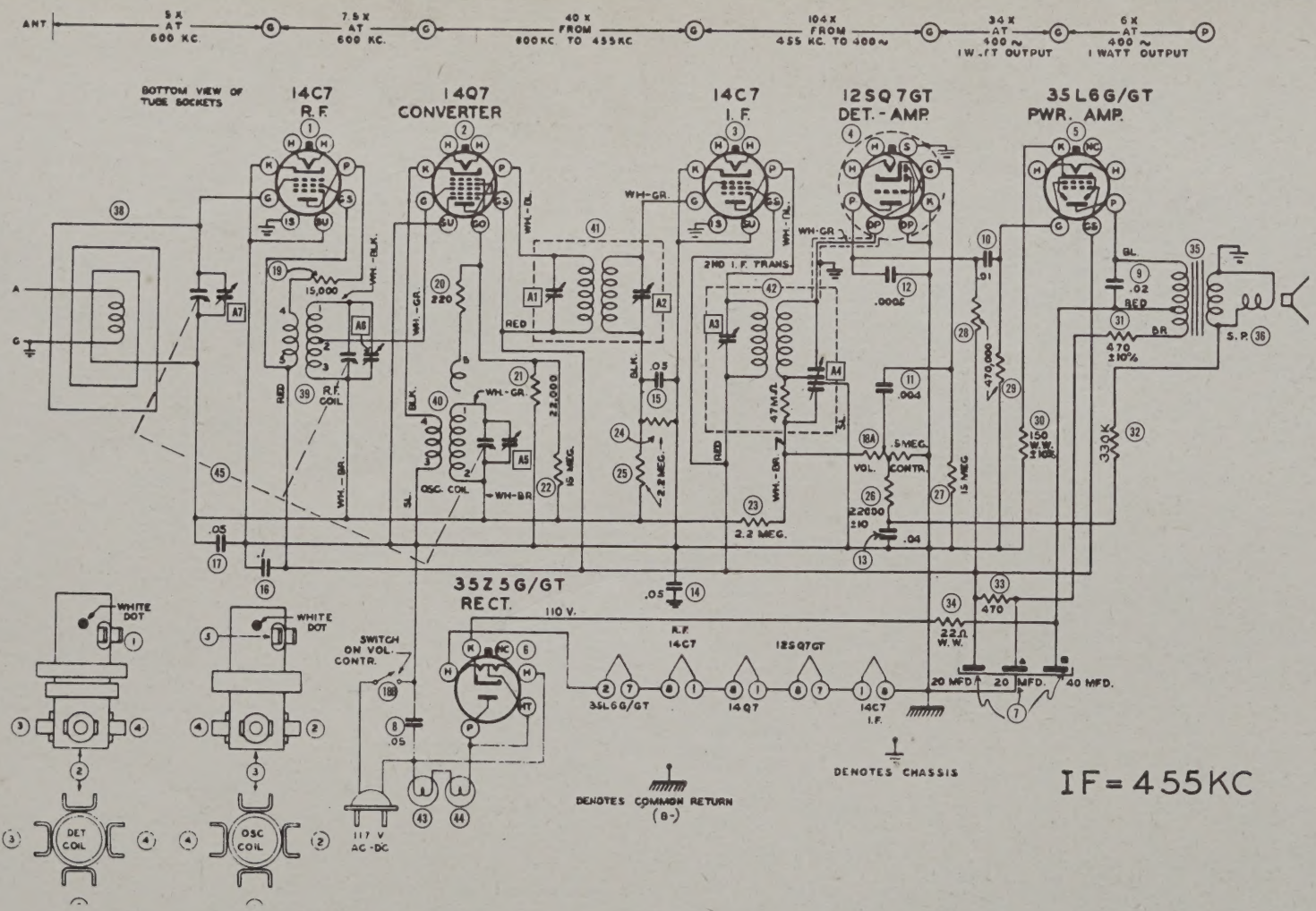


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



ZENITH MODELS
6D014, 6D014W, 6D029, 6D029G



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14C7	37 V.AC	26 V.DC	92 V.DC	0V.	0V.	-35V.DC	0V.	48.5 V.AC
2	14Q7	25V.AC	92 V.DC	92 V.DC	-3.1V.DC	0V.	-35V.DC	0V.	37 V.AC
3	14C7	13V.AC	92 V.DC	92 V.DC	0V.	0V.	-25V.DC	0V.	0V.
4	12SQ7GT	0V.	-5V.DC	0V.	0V.	-25V.DC	43V.DC	13V.AC	25V.AC
5	35L6GT	0V.	87 V.AC	107 V.DC	92 V.DC	0V.	0V.	48.5 V.AC	5.2 V.DC
6	35Z5GT	0V.	117 V.AC	113 V.AC	0V.	113 V.AC	115 V.DC	87 V.AC	117 V.DC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14C7	35Ω	100KΩ	85KΩ	0Ω	450KΩ	1.6 MEG.	0Ω	45Ω
2	14Q7	23Ω	85KΩ	85KΩ	19KΩ	0Ω	1.6 MEG.	.6Ω	35Ω
3	14C7	12Ω	85KΩ	85KΩ	0Ω	450KΩ	1.6 MEG.	0Ω	0Ω
4	12SQ7GT	450KΩ	1.5 MEG.	0Ω	0Ω	440KΩ	555KΩ	12Ω	23Ω
5	35L6GT	INF.	77Ω	85KΩ	85KΩ	430KΩ	0Ω	45Ω	125Ω
6	35Z5GT	INF.	103Ω	100Ω	INF.	100Ω	85KΩ	77Ω	85KΩ

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

469-35

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.